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TYPHOID FEVER OCCURRING AFTER PROPHYLACTIC INOCULATION *

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Typhoid fever of recent years in our army has been conspicuous by its rarity. It is our purpose here, however, to show that while rare it cannot be considered as nonexistent; that in cases of continued fever it is still to be suspected, and, even more important, that the protection of prophylactic inoculations, great as has been their service, cannot be taken as absolute to such an extent that sanitary precautions can be neglected.

Vaccination against typhoid fever is now practiced as a routine in all modern armies. At the Fifteenth International Congress in 1912, Russell[1] summarized the statistics up to that time with reference to the use of typhoid vaccine in our army and the armies of Europe. During the same meetings Nichols[2] described some of the methods of producing typhoid vaccine, giving in detail practically the same method as is now used in producing all typhoid vaccines; and as the U. S. Public Health Service has adopted a standard for all commercial vaccine, the question of uniformity would seem to be fairly well established. Experience of the armies in the present war has continued to support the belief that such vaccination, especially since the addition of *B. paratyphosus* A and B,[3] has rendered typhoid fever, formerly a prominent war disease, a very minor source of sickness. While it is true that sanitation has been greatly improved, it is impossible to contend that it has reached such a degree of perfection as to account for this result, so that it is generally conceded that the principal factor has been vaccination.

Yet in spite of sanitary precautions and vaccination, occasional cases of typhoid fever, like those herein reported, have occurred. Bradbury[4] has reported four cases, and others, in addition to those studied by us, have been included in army reports of contagious diseases.

In the latter part of June, 1918, cases began to appear at the base hospital at Camp Greene, N. C., which from their gradual onsets, climbing temperatures, without evidence of local inflammatory disease, enlarged spleens, rose spots and leukopenia presented the clinical picture of typhoid fever. Cultures from blood, stools and urine resulted in isolation of the typhoid bacillus. The subsequent course of the group of cases added confirmation of the diagnosis of typhoid, by protracted fever, falling by lysis, a tendency to delirium, in three cases relapse, and in three cases small intestinal hemorrhages. It was beyond dispute, therefore, that we were dealing with a miniature epidemic of typhoid fever.

The cases belonging to this epidemic, with certain other cases occurring at the hospital, are reported in brief herewith.

REPORT OF CASES

CASE 1.—L. K., sergeant, Co. 6, 4th M. M. S. C., who came to Camp Greene, March 29, 1918, was taken sick, about June 26, with abdominal pain, headache and fever, and was admitted to the hospital, June 28. He had fever, rose spots and an enlarged spleen; his condition was febrile, including a relapse, until August 12. There were hemorrhages. *B. typhosus* was isolated from the blood and the urine. He had been a member of 8th Company until about two weeks before he was taken ill. His drinking water had been taken from an 8th Company barrel. The patient had been on kitchen police duty for a day about two weeks before. He did not drink water from any well or spring. He drank milk, bought at canteen, the bottles of milk being iced. He ate ice cream at a canteen and also at Charlotte, N. C. He had some meals at a restaurant at Charlotte. He always ate cooked foods, and had eaten no lettuce or tomatoes or other fresh vegetables. He had visited the Charlotte soldiers' club a number of times, but no private homes. The first and second typhoid inoculations had been given at Jefferson Barracks, the third at Camp Grant, between Dec. 15, 1917, and Jan. 2, 1918.

CASE 2.—A. J., private, 8th Company, 4th M. M. S. C., had been taken ill about June 22, 1918, and was admitted to the hospital, June 28, with abdominal pain, vomiting, headache, fever, rose spots and enlarged spleen. He was febrile until July 18. *B. typhosus* was isolated from the blood. His drinking water had been in a barrel. He did not drink water from any well or spring. He did not drink milk. He ate ice cream from a canteen and at different places in Charlotte. He had some meals at Charlotte, but all the food was cooked. He ate lettuce once at mess. He had been on kitchen police duty about three weeks before. He visited the soldiers' club a few times. He did not visit any private homes or the Y. M. C. A. The service record disclosed that typhoid inoculations had been performed at Kelly Field, about Jan. 1 to Jan. 18, 1918, and completed January 16.

CASE 3.—K. E. T., private, 1st Company, 4th M. M. S. C., had been taken ill about June 26, 1918, and was admitted to the hospital, June 28, with headache, poor appetite, nausea

* Read before the Society of American Bacteriologists, Baltimore, Dec. 28, 1918.

1. Russell, F. F.: Bull. 2, U. S. War Department.
2. Nichols, H. J.: Bull. 2, U. S. War Department.
3. Craig, C. F.: Triple Typhoid Vaccine (Bacillus Typhosus, B. Paratyphosus A, and B. Paratyphosus B), J. A. M. A. **69**: 1000 (Sept. 22) 1917.
4. Bradbury, Samuel: Typhoid in a Company of Immunized Soldiers, J. A. M. A. **71**: 532 (Aug. 17) 1918.

and fever; enlargement of the spleen was doubtful; there were no rose spots; he was febrile until July 17; a recrudescence occurred, July 24 and 25. *B. typhosus* was isolated from the blood. He had been a member of 8th Company until about two weeks before. His drinking water had been in a barrel taken from 8th Company. He usually drank from a cup hanging from the barrel. He also drank at several places in Charlotte. He never drank milk. He ate ice cream from a canteen. He had some meals at Charlotte, but always ate cooked food. He did not eat lettuce, tomatoes or other vegetables. He had been on kitchen police duty about a month before. He did not drink water from any well or spring. He visited the soldiers' club once or twice a week and drank orange juice while there, common drinking glasses being used. Ice was placed in the orange juice to cool it. The service record, Dec. 28, 1917, disclosed that typhoid inoculations had been given at Jefferson Barracks between Dec. 14, 1917, and Jan. 3, 1918.

CASE 4.—R. E. G., private, medical department, base hospital, Camp Greene, N. C., had enlisted at Fort Douglas, Utah, June 4, 1917, and had served at the post hospital, Fort Russell, Cheyenne, Wyo., from June, 1917, to Jan. 3, 1918; in the medical department, 4th M. M. S. C., Camp Hancock, from Jan. 19 to April 10, 1918, and the medical department, base hospital, Camp Greene, from May 26, 1918. He had been taken ill, June 17, and was admitted to the hospital the same day with abdominal discomfort, vertigo, vomiting, sore throat, fever and an enlarged spleen. There were no rose spots. His condition was febrile, including a relapse, until July 19. *B. typhosus* was isolated from the urine. He drank water from a spigot while in the medical department of the 4th M. M. S. C. He drank water from a well at a farmhouse back of the barracks, at the base hospital. He did not drink milk. He ate ice cream at several places while in Charlotte. He did not eat lettuce, tomatoes or other uncooked food. He was not an attendant in any ward. He did not attend any one while attached to the base hospital. He did not visit Charlotte. He was not on furlough. Inoculations had been given at Fort Russell in July, 1917; he had taken six consecutive doses.

CASE 5.—H. S., private, Co. 7, Casual Camp 1, had enlisted at Atlanta, Ga., June 6, 1917. From June 15, 1917, to April, 1918, he had been a member of Company C, 47th Infantry, stationed at Syracuse, N. Y., until October, 1917, when it proceeded to Camp Greene, N. C. The patient had been transferred to Casual Camp 1, and had been taken ill, July 5, 1918, and was admitted to the hospital, July 5, with headache, constipation and fever. There were rose spots; the spleen was not felt; the patient was febrile until July 20. *B. typhosus* was isolated from the urine and feces. The patient drank water from a Lister bag. He drinks milk, but had not drunk any since April. He ate ice cream at mess in Casual Camp 1 and also at Charlotte. He did not eat tomatoes, lettuce or other uncooked food. He did not visit in Charlotte. He was on furlough to Baxley, Ga., in January, 1918. Typhoid inoculations had been given at Syracuse, N. Y., in August and September, 1917. He had had two inoculations at Augusta in June, 1917.

CASE 6.—K. L., private, 18th Company, 5th M. M. S. C., enlisted at Bridgeport, Conn., Dec. 13, 1917, and was sent to Camp Dix and then to Camp Hancock, Ga. He remained in quarantine fourteen days to see if measles would break out. Four days later he was sent to Camp Greene, N. C., arriving, March 25, 1918. He had been taken ill, March 11, and was admitted to the hospital, April 1, with headache, chills, weakness, poor appetite and fever. There were rose spots and an enlarged spleen. His condition was febrile, including a relapse, until April 30. The fever was undetermined, April 12. June 10, there was acute cholecystitis, for which cholecystotomy was performed. *B. typhosus* was isolated from the gallbladder. The patient had been in the kitchen one week before coming to Camp Greene. He was ill most of the time between his arrival at Camp Greene and coming to the base hospital. He drank water from a spigot at Augusta and Camp Greene. Typhoid inoculations had been given during the month of January, 1918.

CASE 7.—M. K., medical department, 4th M. M. S. C., had been taken ill, June 21, 1918, and was admitted to the hospital, June 25, with headache, nausea, poor appetite and fever. There were rose spots and an enlarged spleen. He was febrile until July 9; he became a chronic carrier. *B. typhosus* was isolated from the feces, August 12. The patient messed with 5th Company. He did not drink water from a well or spring. He did not drink milk. He had had dinner in Charlotte about a month before. He did not have uncooked vegetables, milk or ice cream. He ate ice cream at Liberty Park. He did not handle any food. Water in the mess hall was taken from a galvanized iron can. A Lister bag hung outside of the 5th Company's quarters for men to use. Typhoid inoculations had been given at Spokane and Fort Russell during June and July, 1917. Repeated examinations of the urine and feces have proved that this patient has developed into a carrier.

CASE 8.—C. W. T., private, 3d Company, 4th M. M. S. C., first stationed at Camp Devens about March 29, 1918, came to Camp Greene about April 26, 1918, and was transferred to 3d Company, 4th M. M. S. C. He was taken ill, June 30, 1918, and admitted to the hospital July 7, 1918, with headache, poor appetite and fever. There were rose spots and an enlarged spleen. The patient was febrile until July 26, 1918. *B. Typhosus* was isolated from the blood. The patient had had one drink of water from a pump located near the Casual Company. He drank water from a galvanized iron can in the mess hall of the 3d M. M. He drank water at the Knights of Columbus and the Y. M. C. A. He drank orange punch at the soldiers' club, Charlotte. He ate ice cream at mess, also at soldiers' club. He did not drink milk. Typhoid inoculations had been given at Camp Devens, and were completed, April 15, 1918.

CASE 9.—R. H. L., corporal, 16th Company, 4th M. M. S. C., had enlisted at Greenfield, Dec. 12, 1917, and was sent to Fort Slocum immediately. He had been there four days, when he was sent to Kelly Field, where he remained one month. He was at Camp Hancock about two months. He came to Camp Greene about April 1, 1918, and was at the 9th Casual Company about one month. He was transferred to 8th Company, 4th M. M. S. C., and had been transferred to 16th Company, 4th M. M. S. C., about six weeks before. He was taken ill about July 4, 1918, and was admitted to the hospital, July 7, with headache, vomiting, constipation and fever. There were rose spots and an enlarged spleen. He was febrile until July 25. *B. typhosus* was isolated from the blood. He drank water from a barrel in the mess hall of 8th Company. He drank orange punch at the soldiers' club two or three times. He ate ice cream in drug stores in Charlotte, and at the mess of 16th Company. He ate tomatoes at the mess of the 16th Company. He ate lettuce a few times. He did not drink milk. He had no water from wells or springs. The first dose of typhoid vaccine had been given at Fort Slocum. Afterward, he had four doses at Kelly Field. Inoculations were completed the first week in January, 1918.

CASE 10.—J. A. P., private, 8th Company, 4th M. M. S. C., enlisted at Fort Logan, Dec. 13, 1917. He was there two or three weeks and sent to Kelly Field. He was sent to Camp Hancock about Jan. 15, 1918. He was ill on arrival at Camp Hancock. He arrived at Camp Greene about the middle of May. He was taken ill, July 4, and admitted to the hospital, July 7, with headache, nausea, constipation and fever. There were rose spots and an enlarged spleen. He was febrile until August. There was hemorrhage. *B. typhosus* was isolated from the blood. He drank water from a barrel in the mess hall, and also a few times from wells and springs. He ate ice cream in Charlotte three or four times. He did not drink milk. He ate lettuce once or twice. He visited the Y. M. C. A. a few times. He did not visit the soldiers' club. Typhoid inoculations had been given at Kelly Field. They were completed the first week in January, 1918.

CASE 11.—T. C. M., private, 7th Company, 4th M. M. S. C., was admitted two weeks before the other patients. He had been inducted into service at Union County, Miss., Sept. 27, 1918; sent to Camp Pike, Ark., and assigned to the 334th M. G. Battalion, transferred about Nov. 12, 1917, to the 150th

Infantry, Camp Beauregard, La.; transferred, Jan. 29, 1918, to the 1237th Casual Company, 4th M. M. S. C., Camp Hancock, Ga.; transferred, March, 1918, to the 9th Casual Company, 4th M. M. S. C., Camp Greene; transferred, April, 1918, to the 8th Company, 4th M. M. S. C., and transferred about June 5, 1918, to the 7th Company, 4th M. M. S. C. Two days after admission, tertian malaria was found. Urine and feces were sent to the laboratory at frequent intervals, and sometimes every day; all examinations were negative. Typhoid fever was never proved bacteriologically. The patient was admitted to the hospital, June 17, 1918. July 4, he had headache, vomiting and a rising temperature. There were questionable rose spots, and the spleen was palpable. The patient was febrile until July 22. He drank water from spigot in the 7th Company, and also from a Lister bag in the 8th Company. He drank no water from wells or springs. He did not use a common drinking cup. He ate ice cream at the mess of the 7th Company. He did not eat lettuce, tomatoes, cucumbers or other uncooked food. There had not been much illness or bowel complaint in the company. He did not visit Charlotte. He was not on furlough. Typhoid inoculations had been received at Camp Pike, Oct. 1, 11 and 19, 1917.

CASE 12.—F. D. B., private, Co. M., 39th Infantry, enlisted, Sept. 1, 1917, and had been in the base hospital since Dec. 8, 1917, with pneumonia, empyema, etc. Onset of headache, vomiting, and looseness of bowels occurred, Aug. 5, 1918; there were fever and rose spots; the patient was febrile until August 30; there was hemorrhage. *B. typhosus* was isolated from the blood. The patient had been on a regular diet for some time. He had received three typhoid inoculations, at weekly intervals, at Syracuse, N. Y., in September, 1917.

Cases occurring about this period in men who had received either no vaccine or in whom the inoculations had not been completed are herewith included:

CASE 13.—J. W., recruit, Co. 1, Recruit Camp 1, inducted into service, July 29, 1918, and lived at Norfolk, Va., about eleven months, returned to his home, Statesville, N. C., about one week before coming to Camp Greene, N. C. While at Norfolk, Va., he lived in a car provided for workmen by the Norfolk & Southern Railroad in their railroad yards. He drank water from a spigot, and ice water from a bucket. He worked as a fireman and cleaner. He was admitted to the hospital, August 7. He had been taken ill about August 1. He had chill, headache, pain in abdomen, and fever. There were no rose spots nor enlarged spleen; he was febrile until September 4. *B. typhosus* was isolated from the blood. He usually ate ice cream on Sunday. He ate mostly cooked food. He drank milk every day. He did not know of any typhoid at Statesville, N. C. He had received the first dose of typhoid vaccine, Aug. 2, 1918.

CASE 14.—W. W., recruit, 9th Company, Recruit Camp 1, came to Camp Greene, N. C., Aug. 1, 1918. He had been working in the steel mills at Homestead, Pa., for about eleven months. He was at his home at Weldon, N. C., one night before coming to Camp Greene. He was ill when he left Homestead, Pa. He was admitted to the hospital, August 5. *B. typhosus* was isolated from the blood. He drank water from a spigot. He used his own drinking cup. He ate all cooked food. He did not eat ice cream. He did not have typhoid inoculations or vaccination.

CASE 15.—A. C., recruit, Company 10, Recruit Camp 3, entered the service about Aug. 21, 1918. He visited his mother at Lagrange, Tenn., about three weeks before coming to Camp Greene. He drank water from a well. He was ill when he arrived at Camp Greene, and was admitted to the base hospital, August 26, with headache, backache and weakness; he was febrile until September 30; a relapse occurred, October 7 to 17. *B. typhosus* was isolated from the blood. He does not drink milk. He drank water from a spigot. He received one dose of typhoid vaccine.

CASE 16.—N. M., recruit, Company 21, Recruit Camp 4, entered the service about Sept. 1, 1918. His home was at Cleveland, where there had been a number of cases of typhoid. He was ill on arriving at Camp Greene, and was admitted to the hospital, September 8, with malaise, weakness and fever. There were rose spots and an enlarged spleen; he was febrile until September 28. *B. typhosus* was isolated from the blood. He does not drink milk. He drank water from a spigot. There had been no typhoid prophylaxis.

CASE 17.—C. A., recruit, Company 9, Recruit Camp 1, entered the service from Hoskins, N. C., July 29, 1918. He was taken ill, September 7, with headache and vomiting, and was admitted to the hospital, September 12, with fever and enlarged spleen. The febrile condition, including a period of relapse, lasted until October 9. *B. typhosus* was isolated from the blood. He drank milk at home, where he owned a cow. He drank milk at the canteen. He ate ice cream cones from a store near his quarters. There were some flies in the mess hall. The drinking water was in a barrel, and there was ice in the water. The cup used for drinking purposes hung at the side of the barrel. The patient used his own cup to drink from. He drank water from a deep well at home. He had fresh vegetables, raised at home, on a farm. He had fresh tomatoes at mess. He received two doses of typhoid vaccine.

CASE 18.—L. McD., recruit, Co. 1, Recruit Camp 4, entered the service, Sept. 4, 1918, at Spartanburg, S. C. He was taken ill, Sept. 10, 1918, with headache, and was admitted to the hospital, September 21, with fever, rose spots, and an enlarged spleen. He was febrile until October 31. *B. typhosus* was isolated from the blood. He drank water from a hydrant, except at meals, and ice water was given by the man who dipped it from the tub. He had a deep well at home. He drank no milk. He ate no fresh vegetables. He ate no ice cream. There were no flies in the mess hall. There was no history of typhoid fever at home. He received two doses of typhoid vaccine, Sept. 9 and 16.

PRECAUTIONS TAKEN

Suggestions made to the regimental surgeon of the Fourth M. M. S. C., with reference to examination of carriers, quarantine, etc., resulted in an order being issued by him to this effect:

1. Cases have been admitted to the base hospital, of recent date, that were suspicious of typhoid fever. In view of this fact, I would recommend that no changes be made of cooks and food handlers until further notice.
2. Lister bags with suitable coverings only will be used for drinking water; all drinking water will be chlorinated. Soldiers will use individual drinking cups.
3. The handling of cooked food, by kitchen police, will be discontinued.
4. The 8th Company will be quarantined, on account of its being a possible source of infection, until laboratory examinations can be made.
5. Two doors to mess halls will be used (the end door leading into the mess hall, and one leading directly into the kitchen), all other doors to be nailed shut and every available means be used to rid the mess hall of flies. All cooked food will be covered.
6. All kitchen men will thoroughly wash their hands before handling any food.

SEARCH FOR THE SOURCE OF INFECTION

The cases of typhoid fever occurring in Charlotte at this time were thought by the health authorities to be fly borne, owing to the large number of open privies in certain parts of the city.

While the mess hall of the company, in which most of the cases occurred had large numbers of flies when we went to make examination for possible sources of infection, that did not seem likely to be the source, because latrines were at some distance, and were properly cared for and well screened.

What could carry such a massive infection? Was it vegetable, milk, ice or ice cream?

Some of the companies in which the cases occurred placed ice in the drinking water, a large amount of water being prepared either in a galvanized iron can or a barrel. Examinations of water from these bar-

rels and cans showed contamination due to the method of handling the ice, and exposure to dust and flies. These were negative: *B. typhosus* was not isolated. The Public Health Service, having charge of extracantonment work, was examining the milk supply; besides, as will be noted from the histories, milk as a beverage was not used by eleven of these men. A few of the men used the showers and pool at the Charlotte Y. M. C. A. This pool seemed to be very efficiently managed.

Ice supplied to Camp Greene is made from distilled water, and while this ice might become infected in handling, or from dust and dirt getting into the tanks from the shoes of the workmen, this method of distribution was not likely.

It will be noted from the histories that most of the men ate ice cream practically every time they visited Charlotte, and sometimes visited ice cream counters several times during the few hours they were in the city.

Few green vegetables were used in camp; as the histories will show, most of the men did not have fresh vegetables.

The camp water supply had been examined at frequent intervals from samples submitted by an officer connected with the office of the camp surgeon, and daily examination of water from the laboratory tap was made. As noted above, additional examinations were made of the water supply, and also of the water in the containers used for drinking purposes; *B. typhosus* was not found.

Nine cases occurred in one organization:

One in the medical detachment.

One in the 1st Company (transferred from the 8th Company two weeks before being taken ill).

One in the 3d Company.

One in the 6th Company (transferred from the 8th Company two weeks before being taken ill).

One from the 7th Company (transferred from the 8th Company two weeks before being taken ill).

Two in the 8th Company (transferred from the 8th Company two weeks before being taken ill).

One in the 16th Company (transferred from the 8th Company six weeks before being taken ill).

One in the 18th Company.

The last mentioned patient undoubtedly acquired his infection in Augusta, Ga., and it occurred three months before any other cases; the patient was still in the hospital when the other cases occurred. Repeated cultures made in this case failed, until he was operated on for gallbladder drainage, when a positive culture of *B. typhosus* was obtained.

The patient from the 7th Company (Case 11) was admitted to the hospital, June 17, two weeks before the apparent real outbreak. Tertian malaria was demonstrated two days after admission. Later he was believed also to have typhoid; the fever ran the usual course, but was never proved bacteriologically, although urine and feces were sent to the laboratory at frequent intervals, sometimes every day, but with negative results for *B. typhosus*.

One case occurred in the hospital, this patient having been a bed patient since December, 1917. It was decided to look for a carrier among the nurses and orderlies. Eighty nurses and seventy-two orderlies were examined, all were negative with one exception. A nurse was found to be a carrier, having had typhoid fever seven years before; but this nurse had not been on ward work since April, so that the possibility of her being responsible for this case can be ruled out.

About this time six other cases occurred in recruits, Cases 13 to 18, inclusive. Two had one dose, two had two doses, and two had no inoculations of triple typhoid vaccine.

The question then arose whether there may not have been some defect in the preparation or fault in the administration of the vaccine. In each of our cases this point was therefore investigated. It was found, as shown by the histories, that all had had the regular prophylactic injections within a year at proper intervals, as attested both by the soldiers' statements and by their service records. It was not possible to trace the preparations of vaccines used, but the fact that these soldiers had received their preventive inoculations at different times and at different camps, together with the known care with which the Army vaccine is prepared, renders it unlikely that the failure of immunity was due to failure to receive the standard vaccine in standard doses.

Much more strongly suggested was the exposure of these patients to massive doses of the infecting agent, against which the immunity produced by the standard process of vaccination was inadequate. Most of the cases occurred in a short period of time, coincident with a mild epidemic in the nearby city of Charlotte; most of them occurred in one organization. While, as will be described later, no conclusive source of infection was proved, the assumption was warranted that some source of marked virulence existed.

In attempting to identify such a source of massive infection, the possible presence of a carrier or carriers was first considered. The records showed that 159 men in the organization in which the cases occurred had the preliminary routine examination made for carriers before being accepted as cooks, but there was some question whether some handlers of food had been included. With the discovery of cases, further examinations of stools was instituted, specimens being obtained from sixty-four cooks and food handlers and other soldiers in the organization most concerned; but this organization was moved from camp before all examinations planned could be carried out. However, no carriers were found during this examination.

TABLE 1.—CULTURAL EXAMINATIONS

Case	Month Inoculated*	Date Taken Ill	Date of Admission	Blood: No. of Examinations †	Blood: Date of Positive Culture	Urine: No. of Examinations	Urine: Date of Positive Culture	Feces: No. of Examinations	Feces: Date of Positive Culture
1. L. K.	1/1918	6/26	6/28	1	7/3	12 (1)	7/ 3	11 (0)	0
2. A. J.	1/1918	6/22	6/28	2	7/3	15 (0)	7/22	8 (0)	0
3. K. E. T.	1/1918	6/26	6/28	1	7/3	13 (8)	7/25	8 (4)	7/25
4. R. E. G.	7/1917	6/17	6/17	3 (0)	0	14 (7)	7/21	12 (0)	0
5. H. S.	9/1917	7/ 5	7/ 5	1 (0)	0	13 (5)	7/22	9 (4)	7/21
6. K. L.	1/1917	3/11	4/ 1	1 (0)	0	14 (0)	0	10 (0)	0
7. M. K.	7/1917	6/21	6/25	4 (0)	0	28 (19)	9/14	25 (10)	8/15
8. C. W. T.	4/1918	6/20	7/ 7	1	7/ 8	18 (0)	0	15 (0)	0
9. R. H. L.	1/1918	7/ 4	7/ 7	1	7/ 8	12 (5)	7/21	13 (0)	0
10. J. A. P.	1/1918	7/ 4	7/ 7	1	7/ 7	17 (11)	7/30	13 (7)	7/21
11. T. C. M.	10/1917	6/19	7/ 4	2 (0)	0	9 (0)	0	8 (0)	0
12. F. D. B.	9/1917		8/ 9	1	8/ 9	13 (0)	0	12 (10)	9/20
13. J. W.	8/1918	8/ 6	8/ 7	1	8/ 6	15 (11)	9/29	15 (0)	0
14. W. W.	None	8/ 3	8/ 4	1	8/ 5	16 (12)	10/ 5	13 (10)	10/ 5
15. A. C.	8/1918	8/21	8/26	1	8/28	7 (3)	9/20	12 (5)	9/11
16. N. M.	None	9/ 1	9/ 8	2	9/11	10 (5)	9/26	8 (1)	9/10
17. C. A.	8/1918	9/10	9/12	1	9/14	7 (1)	9/20	5 (0)	0
18. L. McD.	9/1918	9/20	9/21	1	9/22	5 (1)	9/25	7 (1)	9/25

* Month refers to time when inoculations were completed.

† In this table, 0 means negative; the figures in parentheses denote the first examination that gave positive findings. In Case 6 a positive culture was obtained following operation.

‡ Examination for cook, May 6, negative. Examination for hookworm, May 15, positive; negative obtained after treatment. Diagnosis for typhoid fever, July 4.

Table 1 shows the results of cultural examinations of blood, urine and feces. It is to be noted that positive blood cultures were obtained in thirteen cases, or 72.2 per cent.; urine cultures in thirteen cases, or 72.2 per cent., and feces in only nine cases, or 50 per cent.

BACTERIOLOGIC TECHNIC

Blood Cultures.—Ten c.c. of blood were drawn into a Lüer syringe and then cultivated in a bottle containing 100 c.c. of plain bouillon. After from twenty-four to forty-eight hours a loop was streaked on freshly poured Endo plates and these incubated for twenty-four hours. Suspicious colonies on Endo plates were fished to Russell medium and finally subjected to agglutination tests and carbohydrate reaction, glucose, saccharose, lactose, maltose, mannite, and litmus milk being used. Endo plates more than twenty-four hours old were never used. Frequently two and three Endo plates were made, the same spreader being used without reinoculation so that well isolated colonies could be studied.

Feces.—Bile mediums and also mediums recommended by Teague, 30 per cent. glycerin in physiologic sodium chlorid solution, was used. A small portion of feces about the size of a hickory nut was placed in 20 c.c. of either of the foregoing mediums, the specimen broken up, and incubated over night. Freshly poured Endo plates were then streaked, incubated twenty-four hours, and the same technic followed as noted under blood cultures.

Urine.—The same technic was used as with feces except that specimens were collected directly into bottles containing the culture mediums and incubated from twenty-four to forty-eight hours before plating.

All cultures were sent to the Army Medical School for confirmatory diagnosis.

Cross-agglutination tests were run on two different occasions, patient's serum and cultures being used (Tables 2 and 3). The results would indicate the possibility that a vaccine containing a number of strains might give greater protection.

TABLE 2.—CROSS-AGGLUTINATION TESTS WITH TWENTY-FOUR HOUR BROTH CULTURES, SHORTLY AFTER ISOLATION OF CULTURES *

		Cultures					
	Case	1 L. K.	3 K. E. T.	9 R. H. L.	2 A. J.	10 A. P. J.	8 C. W. T.
Serums	1. L. K.	0	0	0	0	0	0
	3. K. E. T.	1:100	1:200	1:400	1:200	1:200	1:800
	9. R. H. L.	0	0	0	0	0	1:100
	2. A. J.	0	0	0	1:100	0	0
	10. J. A. P.	0	0	0	0	0	0
	8. C. W. T.	0	0	0	0	1:100	1:100

* In this table, 0 indicates negative result.

TABLE 3.—CROSS-AGGLUTINATION TESTS FOUR WEEKS FROM TIME DIAGNOSIS WAS MADE *

		Cultures												
	Case	1. L. K.	3. K. E. T.	9. R. H. L.	2. A. J.	10. J. A. P.	8. C. W. T.	6. K. L.	4. R. E. G.	5. H. S.	7. M. K.
Serums	1. L. K.	—	—	1:240	0	—	—	—	1:240	1:120	0
	3. K. E. T.	—	—	—	0	—	1:240	—	1:120	1:240	0
	9. R. H. L.	1:960	1:480	1:480	0	1:480	1:960	—	1:960	1:960	0
	2. A. J.	1:240	1:240	1:240	0	—	1:240	—	1:480	1:480	0
	10. J. A. P.	1:240	1:960	1:960	0	1:100	1:240	—	1:120	1:480	0
	8. C. W. T.	1:960	1:480	1:480	0	1:960	—	1:960	1:960	1:960	0
	6. K. L.	1:960	1:120	1:960	0	1:960	1:240	—	1:960	1:960	0
	4. R. E. G.	1:960	1:120	1:960	0	1:960	1:480	—	1:480	1:960	0
	5. H. S.	1:960	1:480	1:960	0	1:240	1:480	1:480	1:960	1:100	0
	7. M. K.	1:960	1:960	1:960	0	1:960	1:960	—	1:960	1:480	0

* In this table, 0 indicates not made, and — negative.

The variability of agglutinations with freshly isolated cultures of *B. typhosus* was given some attention. Tests were thus made:

1. Agar cultures grown twenty-four hours at 37.5 C.
2. Broth cultures grown twenty-four hours at 37.5 C.
3. Dreyer's[5] agglutinating fluid. Broth cultures were transplanted for two weeks at daily intervals, a few drops of the last transplant were planted into bottles containing 100 c.c. of broth, incubated for twenty-four hours at 37.5 C., and then 0.1 c.c. of liquor formaldehydi was added. The bottles were placed in the ice box, shaken daily for a few minutes, and after a period of five days were used in the agglutination tests.

The few tests made showed a wide variation both as regards individual strains and as regards the preparation of the agglutinating fluid by different methods.

Our work confirms that of others, showing the desirability of using standard agglutinating fluid for Widal tests. The work also strongly suggests that the same method should be used in checking the agglutination of patient's serum with the homologous strain.[6]

COMMENT

It is to be concluded, therefore, that occasional cases occur in which the usual preventive inoculations against typhoid fever fail to protect against the disease, most probably on account of the ingestion of virulent organisms in massive doses. To eliminate such occurrences, sanitary precautions should prevail; but they can succeed only by constant attention to the guarding of food and drink against contamination. Serious contaminations of water supply and of milk on a large scale near the source can ordinarily be prevented by the efforts of sanitary officers, civil and military, working in cooperation. The contamination of water, ice, milk and food on a smaller scale by carriers among food handlers and flies, however, is a matter that demands more laborious and detailed attention. Success in the protection of latrines and in the control of flies is never absolute, but only relative and in proportion to the care devoted to the subject. No false sense of security from typhoid vaccination should be permitted to relax vigilance in this direction. But more important still, in our opinion, is the supervision of food handlers, not only to insure cleanliness, but also by bacteriologic tests of each individual to exclude the admission of a carrier to any position from which he can contaminate the food or drink of his company. It is to be realized, moreover, that a single bacteriologic test, if negative, is not absolute protection, as illustrated by the number of negative feces examinations even in acute cases. Inquiry should therefore be made in all cases as to typhoid fever in the past, and when positive or suggestive history is found, the person should be excluded from handling food until repeated cultures have proved negative. More difficult even than the control of the company mess is the supervision of restaurants and lunch counters outside of the camp. The only way of preventing danger from such sources is to prevent soldiers from taking food or drink outside of their own mess, whenever typhoid fever is known to be occurring in the neighborhood.

CONCLUSIONS

1. Care should be taken that cooks and food handlers are not changed and new ones put in their places without examination for carriers of *B. typhosus.*

2. Special inquiry should be made by the surgeon of all prospective cooks and food handlers with reference to their having had typhoid fever, and

5. Dreyer, G., and Torrens, J. F.: Lancet **2**: 1369, 1915.

6. Library facilities have been so meager that we are unable to mention the work of other authors who have published reports of similar work.

note of this made when specimens are submitted for examinations.

3. Repeated examinations should be made of prospective food handlers whose history is suggestive of typhoid fever before the men are accepted for such work.

4. Clinical cases of typhoid fever should have intensive study made of both urine and feces, as is shown in Case 7, in which the patient became a carrier.

THE CLINICAL SIGNIFICANCE OF LYMPHOID HYPERPLASIA OF THE APPENDIX

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In the course of the past fifteen years, one of us, working in the pathologic laboratories at the New York and Bellevue Hospitals, has been almost daily impressed by the fact that, of all appendixes removed at operation, a very considerable number revealed no noteworthy microscopic alterations other than lymphoid hyperplasia, with or without the association of moderate sclerotic changes in the connective tissues. Signs of inflammatory exudation in the appendix were missing, and yet the patients had been subjected to operation because of definite symptoms of appendical disturbances of a subacute or chronic nature. With the exception of a paper by Barss,[1] to whom full credit should be given for first calling attention to the significance of these changes, the literature on the subject appears to be silent. Barss removed seven such appendixes at operation, all of them from children under the age of 14. In our records at Bellevue Hospital, which include the results of the microscopic examination of several thousand appendixes, the occurrence of excessive lymphoid hyperplasia was described as the sole or the predominant change in about 10 per cent. of the total number. We have correlated the clinical and histologic data in a series of twenty cases, no larger number having been investigated for the reason that the historical details were found to be monotonously alike. There seems to be no doubt, however, that the condition constitutes a syndrome of practical importance from the standpoint of its relationship to status lymphaticus and the advisability of operative interference.

FINDINGS IN TWENTY CASES

Of the twenty cases investigated by us, ten occurred in females and ten in males. The ages varied from 2 to 30 years, although additional and exceptional instances have come to our attention in which identical microscopic changes occurred in the appendix as late as the thirty-seventh year. The average age in the series of twenty cases was 17½ years. In all, the history was to the effect that the patients had suffered from two to eight attacks referable to the region of the appendix. In every instance the leukocytes were within normal limits, the differential count disclosing no noteworthy variations in the number of polymorphonuclear cells. The highest count was in a child of 2 years, in whom the leukocytes numbered 14,000, of which 79 per cent. were polymorphonuclear neutrophils. The lowest count was in a boy of 17, the leukocytes numbering 6,000, of which 70 per cent. were neutrophils. In every one of the twenty cases, operation was followed by recovery. From an examination of the clinical histories, it was furthermore developed that the patients had complained of attacks, recurring at intervals of weeks or months, characterized by cramplike pain or by pain and moderate tenderness in the region of McBurney's point, lasting for several hours or days. Muscular rigidity, if present at all, was seldom of marked intensity. Nausea was not uncommon, but vomiting rarely occurred. The temperature was normal in every instance, and the pulse rarely exceeded 80 or 90 beats to the minute. Headache and constipation were fairly common.

Pathologically, the appendixes presented no naked eye or microscopic changes indicative of inflammatory exudate. Some of them were apparently slightly enlarged, others normal in size. The serosa was pale and smooth, a few minute congested vessels appearing at intervals. On section, the lumen was almost immediately found to be diminished in size or even occluded. The mucosa was thickened and swollen, pale or yellowish, and in it pinpoint sized, or slightly larger, rounded, cream-colored bodies were to be detected by the unaided eye. These, on microscopic examination, were found to represent hyperplastic lymphoid follicles, in practically every one of which were large, rounded, circumscribed bodies corresponding to the so-called germinal areas of Fleming. These, in turn, on microscopic investigation, were seen to be made up of innumerable loosely arranged cells, surrounded by a thick mantling of small, densely packed, richly nucleated, and otherwise intact lymphoid cells. The loosely packed cells in the center of the lymphoid nodules varied greatly in size and shape and in the chromatic richness of their nuclei, some of which were pyknotic, while others showed the effects of chromatolysis. Many of the cell forms as well as their nuclei were distorted in outline, and all of them were obviously in the process of disintegration.

In a second variety of appendix removed from individuals who had suffered several attacks of colic in the region of McBurney's point, the hyperplastic and centrally disintegrating lymphoid follicles were supported by a sclerotic or even a hyaline connective tissue framework in which large fat vacuoles sometimes occurred.

In a third variety, occurring oftenest in older patients, the appendix was found to be diminished in size, sometimes reduced to a smooth, pale, cordlike structure which, on microscopic examination, presented only a few atrophic lymphoid follicles and almost complete connective tissue replacement of the mucosa and obliteration of the lumen.

CLINICAL RECOGNITION

Bearing on the clinical recognition of this variety of appendical lesion are several facts of practical significance. In the first place, the occurrence in the germinal follicles of degenerative lesions of the sort described is apparently best explained as a histologic indication of status lymphaticus. These degenerative foci were first described in status lymphaticus by

1. Barss, Harold de B.: Lymphatic Disease in Children Simulating Appendicitis, Am. J. Dis. Child. **15**: 421 (June) 1918.

Lartigau,[2] then by Blumer,[3] and by Norris[4] and his associates[5] in this laboratory, where, in an experience covering a period of more than twelve years, including the systematic microscopic examination of tissues from more than 5,000 necropsies, among them nearly 300 cases of status lymphaticus, we have yet to find the same changes in the lymph nodes in any other condition. These foci may be demonstrated in status lymphaticus wherever lymphoid tissues occur. They are encountered with noticeable frequency in the ileum, the solitary and agminated follicles of which are, of course, in intimate geographic relationship with the lymphoid structures of the appendix. Wherever encountered, these degenerative foci appear to provide visual evidence of that instability of the lymphoid tissues by which status lymphaticus is attended. In the appendix of subjects of status lymphaticus, sudden increase in the cellular content of the lymphoid follicles, occurring at irregular intervals and at an age when the lymphoid tissues as a whole are subject to elastic structural variations, even in physiologic conditions, coupled with the simultaneous eruption of dozens of circumscribed necroses, suffices to explain the symptoms with which this variety of appendical lesion is associated, the absence of changes in the pulse, temperature and blood count, the mildness of the clinical phenomena and the lack of exudate into the tissues of the appendix serving effectually to exclude any suggestion of inflammatory reaction as a possible factor in the process. In the sclerotic appendixes, the overgrowth of connective tissue is to be interpreted as a change secondary to the mechanical effects of frequently recurring enlargement of the lymphoid follicles, the intermittent disturbances thus produced so reacting on the interstitial framework of the appendix as mechanically to effect a simple fibrosis, the ultimate result of which is to bring about more or less complete replacement of the mucosa and submucosa.

Every properly trained medical student recognizes at a glance the so-called phthisical chest, the physical conformation of which has been known for generations, and no one denies its existence or disputes its significance. Not every individual with such a chest develops tuberculosis, however, and not every individual stricken with tuberculosis is provided with a thorax thus architecturally defective. Much the same criticism is applicable to the living subject of status lymphaticus, whose bodily configuration presents deviations from the normal that are constant and recognizable at a glance. This fact, pointed out not long ago by Norris, has been largely ignored, partly, I take it, because it is of recent birth and because this is the day in which the art of inspection no longer occupies the same dignified position among diagnostic methods as it did when physicians depended more on the acuteness of their special senses and less on technical devices.

Thirty years ago, Langerhans' child died suddenly after the administration of antitoxin, a victim of status lymphaticus, and since that time textbook makers have so persistently emphasized the association of sudden death with status lymphaticus that its broader significance has been lost. As a matter of fact, sudden death in status lymphaticus is a comparatively uncommon event; but, when it does occur, the astonishing rapidity of the blow and the unexpected circumstances in which it is delivered are spectacular and exceedingly impressive. Not every individual with the stigmata of status lymphaticus drops dead if pricked with a needle—some, unfortunately, do succumb to this or equally trivial injuries. Moreover, certain subjects of status lymphaticus are not only highly susceptible to infections, notably cerebrospinal meningitis and diphtheria, but in them such infections are apt to pursue a rapidly fatal course. On the other hand, it is, I believe, safe to say that many subjects of status lymphaticus are not only capable of withstanding injuries, both slight and severe, but infections as well.

In the pathologic laboratories at Bellevue Hospital, those visiting physicians and interns who make it a practice to be present at necropsies, are so well acquainted with the changes in bodily configuration of status lymphaticus and have so often seen these structural peculiarities brought into definite postmortem correlation with persistence or enlargement of the thymus gland, hyperplasia of the lymphoid follicles in the spleen, intestine and elsewhere, and hypoplasia of the aorta and of the vessels of the brain that, to them, status lymphaticus is a demonstrated reality, and their knowledge of its existence frequently is applied to problems presented by the patients in the ward. Its surgical importance, however, has received scant attention, either at Bellevue Hospital or elsewhere, so that we are unable to offer any evidence from the available records of the hospital as to the configuration of those patients from whom were removed the appendixes now under consideration.

In the clinical conglomerate of scrofula the elder Gross long ago recognized the angelic child, in whom he pointed out the existence of a so-called lymphatic constitution. It is now known that children of this type are of the category of status lymphaticus. The angelic child may be described as delicately molded but beautifully proportioned, often excellently well nourished, blue eyed or brown, with long lashes, finely chiseled features, transparent cheeks and rapid mutations in coloring, thin lips, smooth skin and silklike hair, shapely limbs and quick, graceful movements, narrow waisted, mentally alert, often precocious. Still other children, with the stigmata of status lymphaticus, are physically and mentally sluggish, coarse featured and sometimes rachitic, but even in these the skin may be fine and the limbs shapely.

After puberty, the clinical recognition of status lymphaticus is even more easily accomplished. In the male the general conformation of the body is of two types: In one—and more particularly is this true of negroes, although by no means confined to them—a magnificent array of muscles is molded over a body of fine proportions and easy, streaming outlines. Some of the most striking examples of physical beauty are to be sought in subjects of status lymphaticus. In the second type, however, one is apt to receive the impression of a form more nearly approaching a rectangle, the squared shoulders, rather flat chest, and indifferent muscular development lending somewhat ungainly proportions to a body no less confidently to be identified, however, as of the status lymphaticus type; for in both the skin is of almost matchless delicacy; the facial and axillary hairs are scantily developed; the thoracic hairs are few or absent, and those of the pubes assume the distribution of the female, that is to say, they are sharply defined in a transverse

2. Lartigau: Ann. Surg. **35**: 745, 1902.
3. Blumer: Johns Hopkins Hosp. Rep. **24**: 270, 1903.
4. Norris, in Johnson's Surgical Diagnosis **3**: 704, 1910.
5. Symmers, Douglas: Status Lymphaticus, Am. J. M. Sc. **156**: 40, 1918; The Cause of Sudden Death in Status Lymphaticus, Am. J. Dis. Child. **14**: 463 (December) 1917.

direction and do not tend to grow toward the umbilicus; the penis is often small and the glans acorn shaped, while the waist line is slender and the thighs arching. In a word, the general appearance of the male body approaches that of the female.

In the female, the recognition of status lymphaticus by inspection is rather more difficult; but the diagnosis may be made with relative assurance by the unusually delicate texture of the skin, by accentuation of the normally graceful outlines of the body, and by the presence of small axillary pads with the scanty growth of hair on them.

FREQUENCY OF STATUS LYMPHATICUS

In the first 4,000 necropsies performed at Bellevue Hospital, status lymphaticus was encountered 249 times (6.2 per cent.).[5] Of this number, thirty-two were under the age of 10, eighty-two were between 11 and 30, ninety-eight between 31 and 50, and thirty-seven over 50. In addition to the occurrence of sudden death in subjects in whom, at necropsy, there is no assignable anatomic cause, status lymphaticus is not uncommonly associated with sudden death in young adults, owing to rupture of congenitally hypoplastic cerebral vessels, occurring spontaneously or as a result of heavy lifting, straining at stool, the tension of argument, fighting, and the like, and there is little doubt that certain of the otherwise unexplained aerial accidents that occurred in the course of the war were due to the same cause. Moreover, hypoplasia of the smaller blood vessels is apparently an element of danger in workers in compressed air, five cases of caisson disease having been examined postmortem at Bellevue Hospital in individuals showing the characteristic stigmata of status lymphaticus.

Emerson,[6] working in the alcoholic wards at Bellevue Hospital, examined 1,000 patients suffering from the effects of attempted suicide and from cocain, morphin, heroin, alcohol and similar habituating drugs. Of this number, 220 (22 per cent.) showed most or all of the physical stigmata of status lymphaticus. I have had occasion to note the characteristic configuration of status lymphaticus in sufferers from neurasthenia and in certain primitive races. In the necropsy rooms at Bellevue Hospital, which are utilized by the several medical examiners and by Dr. Schultze, of the district attorney's office, for the performance of necropsies in medicolegal cases, it is a matter of almost daily observation that suicides and degenerates, and gunmen and other criminals who have met death by violence, present the characteristic conformation and anatomic changes of status lymphaticus. According to the combined statistics of Bartels[7] and Miloslavich,[8] amounting to 232 cases of suicide, 80.5 per cent. showed the signs of status lymphaticus at necropsy. Among epileptics and the insane the condition is common (Karpas).

The association of status lymphaticus and exophthalmic goiter, while not constant, is common, and is particularly noteworthy in connection with the incidence of status lymphaticus among the emotionally unstable. In six cases of exophthalmic goiter investigated postmortem at Bellevue Hospital, signs of status lymphaticus were present in five, in some better developed than in others. Capelle[9] collected sixty instances of exophthalmic goiter from the literature. In 44 per cent. the patients died from intercurrent affections, and in all of them the thymus was persistent and hyperplastic. Of those dying of exophthalmic goiter without associated lesions, 82 per cent. presented enlargement of the thymus, while in cases of sudden death following operation for removal of the thyroid, the thymus was hyperplastic in all.

It has been shown by Daut,[10] Elser[11] and Symmers[5] that a large percentage of all cases of diphtheria and cerebrospinal meningitis occur in subjects of status lymphaticus, and that in them death is apt to follow a noticeably brief illness. Our records at Bellevue Hospital also show that typhoid fever in subjects of status lymphaticus is apt to pursue a rapidly fatal course, although this is by no means constant, for Dr. Van Horne Norrie tells me that he has not infrequently observed such individuals safely through. It is also our experience that about 10 per cent. of all cases of acute infective endocarditis occur in subjects of status lymphaticus—a point worthy of remembrance in dealing with otherwise obscure symptoms of infection in such individuals.

Finally, the clinical significance of status lymphaticus is enforced by the observation that excessive lymphoid hyperplasia of the appendix, associated with the presence of degenerative or necrotic lesions in the germinal areas, occurs so often in children or young adults giving a history of repeated and relatively mild attacks referable to the region of the appendix as to indicate the desirability of routine inspection of all such individuals for the physical attributes of status lymphaticus. This is important in view of the possibility of sudden death under anesthesia or operation and of infection. In such cases the clinical indications for operation are not imperative, and the histology of the appendix shows that the changes do not tend in the direction of perforation, but toward fibrosis. Whether it is best to allow such patients to pass through the annoyance of successive attacks, rather than to accept the not altogether remote risk of sudden death or of infection, is a question which, of course, is to be determined in each case as it arises.

CONCLUSION

There is a clinically recognizable syndrome referable to lymphoid hyperplasia of the appendix, attended by degenerative or necrotic lesions in the germinal areas, with or without sclerosis of the interstitial tissues of the submucosa. The syndrome is marked by repeated attacks of appendical colic, occurring at intervals of days, weeks or months, but is not accompanied by noteworthy changes in pulse, temperature or blood count, and is encountered most frequently in children or young adults. It is probably peculiar to subjects of status lymphaticus.

6. Emerson, Haven: Status Lymphaticus in Adults, Its Clinical Diagnosis and Importance, Arch. Int. Med. **13**: 169 (January) 1918.
7. Bartels: Wien. klin. Wchnschr. **55**: 1826, 1908.
8. Miloslavich: Virchows Arch. f. path. Anat. **208**: 44, 1912.
9. Capelle: München, med. Wchnschr. **55**: 1826, 1908.
10. Daut: Jahrb. f. Kinderh. **47**: 141, 1898.
11. Elser: J. M. Res. **9**: 89, 1905.

The Problem of the Mental Defective.—Mental defectiveness is hereditary and constitutional, and consequently not amenable to our preachings, asylums, reformatories, penitentiaries, etc. We must ever bear in mind that each year a new quota of defectives is born with statistical regularity. They pass through the hands of parents, then the pedagogues, the theologians, the physicians, the social workers, the employers, the courts, the prisons, and back on society, each one in turn passing them up to the next, and no one willing to acknowledge their impotency in the face of mental defectiveness.—Hickson.

STATISTICAL STUDY OF SIMPLE AND TOXIC GOITER AT JEFFERSON BARRACKS, MO.

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Between April 1 and Sept. 1, 1918, 65,507 men passed through the examining barracks at Jefferson Barracks. An enlargement of the thyroid gland was noted in 1,074 instances (1.63 per cent.). In 116 cases (10.7 per cent.) there were toxic symptoms. These men were rejected with a diagnosis of hyperthyroidism or exophthalmic goiter, depending on whether or not exophthalmos was present.

GEOGRAPHIC DISTRIBUTION

Men from fifteen different states—Arkansas, Illinois, Iowa, Indiana, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota, Tennessee, Texas and Wisconsin — are included in these figures. The accompanying table

INCIDENCE OF GOITER

States	Number of Men Examined	Number of Goiters	Per Cent. of the Number Examined	Number of Toxic Goiters	Percentage of Goiters with Toxic Symptoms
Arkansas	4,375	104	2.3	11	10.5
Illinois	24,836	158	0.63	16	10.1
Iowa	998	62	6.2	7	11.2
Indiana	1,465	97	6.6	7	7.2
Kansas	1,792	21	1.1	3	14.2
Michigan	211	7	3.3	0	0
Minnesota	7,551	78	1.3	3	3.8
Missouri	19,577	221	1.1	28	12.6
Nebraska	124	10	8.0	1	10.0
North Dakota	523	46	8.7	9	19.0
Oklahoma	221	84	38.0	7	8.3
South Dakota	387	24	6.2	1	4.1
Tennessee	485	56	11.0	7	12.5
Texas	141	29	20.0	6	20.0
Wisconsin	2,821	77	2.7	10	13.0
Grand total	65,507	1,074	1.63	116	10.8

shows a number in which there were thyroid enlargements, the percentage of thyroid enlargement in the number examined, the number of toxic goiters, and the percentage of goiter cases in which there were toxic symptoms. It is noted that Oklahoma has the highest percentage (38 per cent.) of goiters, followed in order by Texas, 20 per cent; Tennessee, 11; North Dakota, 8.7; Nebraska, 8; Indiana, 6.6; Iowa, 6.2; South Dakota, 6.2; Michigan, 3.3; Wisconsin, 2.7; Arkansas, 2.3; Minnesota, 1.3; Missouri, 1.1; Kansas, 1.1, and Illinois 0.6 per cent. Texas ranks highest in percentage (20 per cent.) of goiters in which there were toxic symptoms, followed in order by North Dakota, 19 per cent.; Kansas, 14.2; Wisconsin, 13; Missouri, 12.6; Tennessee, 12.5; Iowa, 11.2; Arkansas, 10.5; Illinois, 10.1; Nebraska, 10; Oklahoma, 8.3; Indiana, 7.2; South Dakota, 4.1; Minnesota, 3.8, and Michigan, 0 per cent.

The men from whom these figures are compiled are between the ages of 18 and 31 years and, as the table indicates, represent widely scattered areas of a wide section of the country, none of which are free from goiter. Contrary to the prevailing conception, the states in the Great Lakes region stand rather low in the list with regard to the percentage both of simple and of toxic goiter.

TOXIC GOITER

In 100 cases of toxic goiter (hyperthyroidism or exophthalmic goiter) a careful study was made of subjective symptoms and physical findings.

Fifteen (15 per cent.) of these men apparently felt as well as ever, except that they had noticed they were more irritable than usual and had been wakeful at nights during the past few months. Sixty-six complained of palpitation of the heart. This and nervousness were the most common subjective symptoms. Fifty-eight had attacks of dizziness. Fifty-four became short of breath easily and had a feeling of exhaustion on exercise. Thirty-nine complained of precordial pain. Twenty-nine perspired very freely and had hot flushes of the face and hands. These symptoms were all aggravated by physical strain and excitement. The nervous strain of the examination and the new environment was especially noticeable.

DURATION OF THE SYMPTOMS

In twenty-five men (25 per cent.) the symptoms had been noticed for two years or more; sixty-four, one year or more, and ten, less than one year. The remaining fifteen were unable to state the time of the onset of their trouble.

OCCUPATION AND ITS EFFECT

Forty-six men (46 per cent.) stated that they did hard physical labor. Many of these men added, however, that it was becoming very difficult for them to do their work. Fifteen had recently had to change to light work. Thirty-six did light work, and nineteen sedentary work. The men in a light and sedentary occupation were, in most instances, having no difficulty.

PHYSICAL FINDINGS

The tachycardia attracted the attention of the examiner and was invariably the reason given for referring the subject to the cardiovascular board. The pulse rate in a recumbent position before exercise ranged from 90 to 160 per minute. In only six instances (6 per cent.) was the rate below 100. In fifteen, it was from 100 to 110; sixteen, from 110 to 120; twenty-two, from 120 to 130; twenty, from 130 to 140; sixteen, from 140 to 150, and two, from 150 to 160 a minute. The pulse rate as a rule was very unstable, increasing rapidly with exercise or excitement. The latter was often noticed when the stethoscope was placed to the precordium.

ENLARGEMENT OF THE THYROID GLAND

The thyroid gland was enlarged in every instance. In many the enlargement was slight, and in few cases well down under the sternum. Usually the subject was not aware of any increase in the size of the neck.

EYE SYMPTOMS

In fifty-three cases (53 per cent.) there was an exophthalmos; these men were discharged with a diagnosis of exophthalmic goiter. In these the subjective symptoms were more marked. The remaining forty-seven had either staring expression (Stellwag), lagging of the lids (von Graefe) or poor convergence (Moebius), or all three signs.

A fine tremor of the hands was a constant finding in all cases.

The apex impulse was in the fifth interspace in every instance, varying from 6.5 to 8.5 cm. from the midsternal line. In forty-nine cases there was a soft systolic murmur at the apex which was often heard

at the base on the left side. In every instance this was cardiorespiratory in type.

The systolic blood pressure was usually increased. In fifty-one cases the systolic pressure was above 140 mm. of mercury. Of these, twenty-nine were between 140 and 150; eleven, 150 and 160; eight, 160 and 170, and three, 170 and 180. In forty-nine cases the systolic pressure was between 110 and 140. Of these there were two between 110 and 120; twenty-five, 120 and 130, and twenty-two, 130 and 140 mm. of mercury.

COMMENT

According to these statistics, goiter is fairly prevalent in the young male population throughout a large section of the central and western portion of the United States. The percentage is even higher in Texas and Oklahoma than in the Great Lakes region, which is contrary to the prevailing conception. Since these statistics were compiled, men have passed through the examining barracks from Idaho and Montana. A high percentage of them had goiter. We have been told that goiter is very common in the soldiers of Camp Lewis. In the examination of the Thirty-Eighth Division at Camp Shelby, composed of 22,622 men from Indiana, Kentucky and West Virginia, Musser[1] made a diagnosis of hyperthyroidism in ninety-seven cases (0.4 per cent.). Jones,[2] in an article based on the study of 407 cases in the Southeast, states that while goiter is present throughout that section, it is not so common as in the region of the Great Lakes. From this study we conclude that goiter is, no doubt, more common outside of the Great Lakes region than usually considered, and that men are more frequently affected than reports indicate.

DIAGNOSIS

The presence of tachycardia, thyroid enlargement, fine tremor of the hands, eye signs, as lagging lids, staring gaze and poor convergence with increase in systolic blood pressure, in our mind justified a diagnosis of hyperthyroidism. When in addition there is an exophthalmos, as in 57 per cent. of our cases, there is no doubt.

It is often very difficult to differentiate these beginning toxic goiters from irritable heart. This is especially true when the thyroid enlargement is very slight and eye signs are indefinite. The history is important. The men with toxic goiter have some, and perhaps all, of the symptoms of irritable heart. They usually complain much less in the former and, as in 15 per cent. of our cases, had practically no subjective symptoms. The blood pressure affords some assistance. The systolic pressure, in our experience, has not usually been increased in irritable heart, in which no organic basis could be found. On the other hand, 73 per cent. of the men with hyperthyroidism had systolic pressure of over 130 mm. of mercury, and 51 per cent. over 140 mm. In doubtful cases the history and eye signs have been the determining factor, and an increased systolic pressure was used as supporting evidence in favor of hyperthyroidism.

HYPERTHYROIDISM AND MILITARY SERVICE

These men with toxic symptoms are in the early stage of exophthalmic goiter. They rarely ever consult a physician in civil life with the symptoms these men present. Many of them, no doubt, would so adjust themselves to their environment in civil life that they would suffer no inconvenience. In this series 15 per cent. had recently changed to light work.

Physical and mental strain have long been known to be important factors in precipitating or aggravating the symptoms of toxic goiter. These factors in military training would most probably break down many of these men. Major L. M. Warfield and I have observed twenty cases in the hospital, where they were given graded exercises. Nine of these men were sent to the hospital from the examining barracks suspected of having hyperthyroidism. In every instance the subjective symptoms grew progressively worse. No doubt the first few days in an army post aggravated the already incipient symptoms. Eleven men were sent to the hospital because they were no longer able to do their work satisfactorily. All had marked symptoms of hyperthyroidism. Seven had definite exophthalmos. Four stated that they had no symptoms prior to entrance in the Army. The remaining seven date their trouble back to civil life, but contend that they had become markedly worse since they began their military training. The average service given by these men was one and a half months. These observations are too few to justify definite conclusions. They are, however, confirmatory evidence in favor of the prevailing conception that the toxic goiter is a poor military risk.

1. Musser, J. H., Jr.: The Tachycardia of Soldiers, Am. J. M. Sc. **155**: 883 (June) 1918.
2. Jones, E. G.: Goiter in the Southeast, J. A. M. A. **71**: 712 (Aug. 31) 1918.

ACUTE LYMPHATIC LEUKEMIA COMPLICATING PULMONARY TUBERCULOSIS *

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The etiology of leukemia, although studied in detail by numerous investigators, still remains obscure.

Malaria, pregnancy, syphilis, splenic trauma and tuberculosis are regarded by many as the exciting agent. Whether these conditions are causative or merely coincident cannot be definitely ascertained at present, owing to the comparatively rare incidence of the disease, and the relatively small number of cases thus far reported.

Still others believe that the condition is due to a specific micro-organism. Ward,[1] who has made an intensive study to determine whether or not infection is the cause, came to a negative conclusion, basing his opinion on these observations:

1. There is a congenital form of leukemia found in children of normal parents.
2. Leukemic parents have never been known to transmit the disease to their offspring.
3. Very few instances of supposed transmission of the disease have occurred.
4. Leukemia has a marked preference for a particular age and sex, and in this differs from infectious diseases.

Cameron recites a case that tends to show that leukemia is due to infection or to the existence of a strong hereditary tendency. The grandmother and mother of the patient, as well as a brother, suffered from symptoms strongly suggestive of leukemia. One

* From the New York State Hospital for Incipient Pulmonary Tuberculosis, Ray Brook, N. Y.
1. Ward, G.: Brit. J. Child. Dis. **14**: 10 (Jan.-March) 1917.

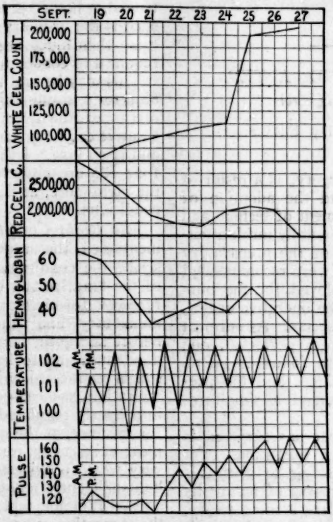
of the patient's children died of the disease previous to its development in the mother, and the death of a second child occurred later from the same cause.

The case in question would suggest more than mere coincidence. Other writers have likewise cited two or more cases of the disease in one household.

Some observers believe that leukemia, as is assumed by some clinicians for carcinoma, is a disease of metabolism. It is pointed out that the onset and termination in certain cases exhibit a marked similarity. The belief that tuberculosis may be an etiologic factor also has its adherents. Dieterle[2] examined a case of primary tuberculosis of the cervical lymph nodes with a wide dissemination of miliary tuberculosis. The case was one of chronic lymphatic myelogenous leukemia with secondary tuberculosis. Tubercle bacilli were found in the venous blood of the right heart on slides stained with carbolfuchsin.

Frankel and Much[3] studied in detail several cases of Hodgkin's disease and lymphatic leukemia. They examined the lymphatic glands in seven cases of lymphatic leukemia by the antiformin method and in each case isolated a thick granular rod, gram-positive but Ziehl negative, morphologically similar to the tubercle bacillus. This bacillus they were unable to cultivate. The results in the cases of Hodgkin's disease were precisely parallel, the bacillus being similar in appearance and staining properties to the one found in the cases of leukemia.

The question naturally arises, after one has noted the results of their investigation as well as that of Dieterle, regarding the possibility of some direct relationship between lymphatic leukemia and tuberculosis. Many students believe that there is some indefinable connection between the two conditions, and for this reason the report of a case of acute lymphatic leukemia complicating chronic tuberculosis may be of interest.



Blood counts; temperature and pulse.

REPORT OF CASE

History.—A woman, aged 30, of Irish-English descent, single, telephone operator, who had had pertussis and measles in early childhood, and pneumonia at 9 years of age with uneventful recovery, complained, in 1914, of feeling weak and tired. Cough and expectoration developed. She did not regain strength. Early in 1916 the condition was recognized as pulmonary tuberculosis, and in May, 1916, the patient was admitted to the New York State Hospital at Ray Brook.

Physical Examination.—The patient was suffering from moderately advanced tuberculosis, and her physical condition was decidedly below par. The left side of the chest from apex to fourth rib, both anteriorly and posteriorly, was very dull to percussion, and fine, dry râles were audible on auscultation. The right apex was slightly involved. Physical examination otherwise was negative. The roentgenogram presented a dense triangular shadow in the left upper three interspaces. The right lung field was clear throughout. The mediastinal contents were displaced slightly to the left. The right leaf of the diaphragm was uniform in outline; the left showed a distinct peak.

Tubercle bacilli were demonstrated in the sputum on several occasions. The blood count was 8,900; hemoglobin, 85 per cent. The white and red cells showed nothing abnormal. Urine examination was negative. The temperature was from 99 to 99.3; the pulse, from 100 to 110; the bowels were constipated; the appetite was fair. The patient seemed quite listless and was of an apprehensive disposition.

Clinical Course.—The pulmonary condition became somewhat better, and in twelve months it was fairly well arrested, the râles in the chest disappearing. The dulness, however, remained, and the general condition of the patient exhibited no marked improvement. There was no appreciable gain in weight. The temperature ranged around 99, and the sputum became negative. Generally she felt fairly well, except for occasional intestinal distress and constipation. No marked change was discernible until early in September, 1918, when the patient began to complain of weakness, and had a temperature of from 99.4 to 99.8 in the evening. September 17, the patient became definitely ill. The temperature rose to 101.2, and was accompanied by nausea and a burning sensation in the stomach. The exacerbation of symptoms was at first attributed to renewed activity of the pulmonary process, although the physical examination did not so indicate. At this time a slight enlargement of the cervical glands was noted. The patient looked anemic, and the conjunctivae were pale. The liver was slightly enlarged; the spleen was not palpable. A blood count was taken September 18, and the result was the discovery of a lymphatic leukemia. The blood count revealed: leukocytes, 103,200; hemoglobin, 65 per cent.; small lymphocytes, 65.5 per cent.; large lymphocytes, 18.5 per cent.; polymorphonuclear neutrophils, 5.5 per cent.; eosinophils, 1.5 per cent.; transition cells, 7.5 per cent.; basophils, 1; normablasts, 0.

From day to day the blood picture changed considerably, as is indicated on the accompanying chart. Some days an improvement was noted only to be followed by a fall in hemoglobin and increase in leukocytes. The lymphatic count varied between 90 and 98 per cent. on the various examinations.

On the night of September 20 the patient had a temperature of 102.2 and vomited a great deal. The following day the axillary, inguinal and cervical glands were much enlarged, and the tonsils became swollen and inflamed, making deglutition difficult.

On the 22d, the patient felt very badly. She had hemoptysis of a few cubic centimeters, and purpuric spots appeared on the abdomen and back. The urine contained a few granular casts and 2 per cent albumin. From this time the clinical manifestations grew progressively worse. Each day she had slight hemorrhages from the mouth; the gums were very tender and bled easily. Herpes appeared on the lips, and the breath became very foul. The urine was thick, and contained large amounts of albumin, and red and white blood cells. The pulse was very fast and bounding, and auscultation elicited a systolic murmur over the mitral area. Headache was almost constantly present, and the tongue was foully coated. During this entire period the spleen was not pal-

2. Dieterle, R. R.: J. Infect. Dis. **19**: 263 (August) 1916; abstr. J. A. M. A. **67**: 638 (Aug. 19) 1916.
3. Frankel and Much: München. med. Wchnschr. **57**: 685, 1910.

pable, and the liver was enlarged only 1 inch below the costal margin. No ascites was evident. The lymphatic glands, however, became progressively larger from day to day.

September 28, the family of the patient insisted on removing her to her home in a distant city, and further progress of the case was not under my supervision. However, the patient survived only fifteen days after the diagnosis was established.

COMMENT

Although no postmortem was held, the clinical picture and repeated examination of the blood are sufficient to establish a diagnosis of acute lymphatic leukemia, malignant in type. One may assume from the clinical notes submitted that in this case pulmonary tuberculosis was the initial disease, and that after an illness of two years, the patient developed acute lymphatic leukemia, of which she died. Possibly histologic examination of the affected glands might have shown some association between the leukemia and the coexistent tuberculosis.

PURGING BEFORE AND AFTER ABDOMINAL SECTION

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A few years ago the drift of surgery, as a result of the introduction of anesthesia and the adoption of antisepsis, was toward the development of technic and the perfection of methods. Coincidentally much attention was given to the elaboration of the preparatory and after-treatment. Many things were recommended and more or less extensively employed for the purpose of fortifying the patient for the operative ordeal, and of neutralizing the untoward effects. As surgical technic improved and methods were perfected, one after another, these measures were found to be no longer necessary and were eliminated, and the preparatory and after-treatment assumed a simplified, more or less routine character.

One of the routine measures that has survived is the preoperative and postoperative purgation. Yet there are those who are now seeking to give this attempted imitation of a simple process of nature its *coup de grâce*. They not only declare it unnecessary, but also attempt to prove by arguments and experimentation that it is harmful in its effects. I will restrict my remarks to purgation in cases of intra-abdominal surgery in which the opening of the peritoneal cavity makes the condition of the intestinal canal a matter of considerable importance.

PREPARATORY PURGING

Before we can discuss preparatory purging intelligently, we must define what we wish to do by it, and how we do it. I suppose that the main purpose is to cleanse the bowels of any gas or feces that might interfere with the attainment of the best results from our operative work. Another is to have a comparatively empty colon in those cases in which it may be desirable to keep our patient constipated for two or three days after the operation.

The main argument against such purgation is that it seldom cleanses the bowels and more often increases than diminishes the abdominal distention; and this really seems to be the case in many instances. An examination of the way in which it is ordinarily carried out in practice will show why: When a plumber cleans out a sewer, he does not put dirt into it at the same time because he knows better; but when the average surgeon prescribes a laxative to clear out the bowels, he allows food to be taken a short time before the laxative is given and permits or orders more to be taken before the laxative has quit working. The result is that instead of cleansing the bowels, the laxative merely moves everything onward. It expels old fecal matter and gas together with the digestive secretions and ferments while the stomach is delivering food into the duodenum. This food not only does not find the normal secretions for its digestion, but it is rushed onward too fast for digestion and arrives in the colon as food for bacteria rather than for the patient. Not only is this true, but more food is usually given before the intestine has recovered from its fatigue sufficiently to take care of it. As a consequence it becomes distended, whether it has been so previously or not. If such is the ordinary preparatory purging—and I think it is—then much argument and experimentation is not required to condemn it.

This may be said to conclude the argument from the objector's standpoint, but it does not touch on the merits of the question. The question is whether a laxative can be given to accomplish what we give it for, and if so how. I think it can, if what I shall call the four R's are observed, namely, the right laxative, in the right dose, at the right time, and under the right conditions.

The Right Conditions.—To begin with the last R mentioned, the surgeon or some one else should prescribe the conditions under which the desired results of the laxative can be secured. The material for the renewed formation of gas should be kept out of the alimentary canal; the last food that the patient takes before taking the laxative should have time to leave the duodenum and to be absorbed before the rapid peristalsis connected with purgation begins. After the purgation has ceased, none but easily digested food in properly regulated quantities should be given, such, for instance, as the quickly absorbable forms of sugar, meat extracts or nutritive wines or, if the patient is very weak, predigested food, until the upper intestine has sufficiently recovered from its fatigue to assume normal function, which may be before or not until after the operation, according to the requirements of the patient. The fact that such severe restriction of the diet is required, however, constitutes an indication for limiting our attempt at securing a collapsed or partially collapsed intestine to those cases in which the intestine is not already sufficiently collapsed and in which the conditions of the operation require it.

The Right Time.—The timing of the laxative must be such that any residual gas that may be left will have a chance to be absorbed. Thus, for a forenoon operation, the laxative will have to be given early on the day before or in some cases the night before that. For an afternoon operation, it will ordinarily be required the night before the operation, and sometimes earlier. If the object in view is to get the patient in a good condition for the operation, it may have to be given three or four days before; and the alimentary canal, for two or three days may have to be allowed to functionate normally and under low pressure, if I may be allowed to use the term.

The Right Laxative and the Right Dose.—On account of the variations in the character of the dif-

ferent operations and the differences in the condition of patients, the kind and amount of purgation should be adapted to the requirements of the concrete case. One abdominal section may require a low incision, another a high one; one a large incision, another a short one; one patient may require work at the bottom of the pelvis, another at the surface; one intestinal work, another none; one operation may be a long one, another a short one; one may require general anesthesia, another local only; that is, in one patient no attention to the bowels may be required even though they are somewhat distended, while in another a carefully conducted preliminary purgation may be essential to reduce the distention and enable the operator to do good work.

Again, a patient may come to us half starved and with collapsed intestine, and may not even need an enema, or perhaps only a mild stimulating one to relieve the sigmoid flexure, or an oxgall enema to soften and remove a few hard fecal masses from a dry and sluggish rectum. In such a case only harm could come from ordinary routine purgation and dieting. On the other hand, a patient may be a strong, hearty eater, with a full abdomen and powerful abdominal muscles who requires active purgation to remove foul gases and diminish intra-abdominal pressure, and who can stand any amount of dieting. One patient may be constipated habitually and on that account require a powerful laxative, another may always have daily movements and require only an enema; one may have accumulations of fat both inside and outside of the abdominal cavity, while another may be emaciated; one may have idiosyncrasies with regard to laxatives, enemas or anesthetics, another may feel as well after purgation or anesthesia as if he had not taken them, while another may have an organic disease that diminishes his resistance or otherwise makes him a bad risk.

Now, who would advocate sending patients for such a variety of abdominal operations and exhibiting such dissimilar conditions to a hospital, to be prepared in a routine way with routine purgation, perhaps without seeing them again until he finds them on the operating table? And yet such is the case in some of our clinics in large, crowded hospitals, where routine is essential to keep things going, and where individualization may be possible only in private cases.

The laxative should be selected, the dose regulated, the time for its administration chosen, and the conditions under which it acts carefully adjusted to suit the requirements of the concrete case instead of being used in a routine way. Then there will be no occasion for the rejection of purgation in the preparation of patients for abdominal sections.

It should be remembered also that the colon bacillus is not very virulent, that it kills people only under exceptionally favorable circumstances, and that patients in normal condition and without abdominal distention do not require a stirring up with laxatives before an abdominal operation. A restriction of the diet will sometimes promote abdominal flaccidity better without a laxative than with it.

POSTOPERATIVE PURGING

With regard to the question of purgation after abdominal section, the cases may be divided into four classes: (1) those in which the character of the operation requires early purgation; (2) those in which it requires delay in the administration of purgatives; (3) those in which the indications are relative, and (4) those in which the question of purgation is not dependent on the fact that the abdominal cavity has been opened.

1. Those cases require early purgation in which a large incision in the middle or lower zone of the abdomen is made in connection with considerable displacement of intestinal coils, and sufficient intraperitoneal traumatism to give rise to subsequent adhesions. Under such conditions, adhesions of displaced or kinked intestinal loops are liable to form and interfere with through and through peristaltic action and result in obstruction and death. Early purgation helps to maintain a permeable canal until the adhesions have formed and the danger of obstruction has passed.

2. Cases in which there has been resection or extensive repair of the intestine usually require dieting and delay in purgation until a certain amount of protective exudate has had time to seal up the intestinal suture lines.

3. Cases in which sutured or denuded areas have been left are not so liable to the formation of extensive or permanent adhesions if peristaltic action is kept fairly active from the time of the operation. Early purgation may not be necessary, yet it may be desirable. An accumulation of gas may require it in one case, while in another dieting or washing out of the stomach or a postural treatment may suffice.

4. Cases in which the incision has been small, with but little exposure or manipulation of the intestine and in which all ligatures or denuded surfaces have been covered, will require purgation or abstention from purgation for conditions that may happen to present themselves, without reference to the fact that the abdomen has been opened. When such patients have not been dieted either before or after the operation, they may have early spontaneous bowel movements without laxatives or may merely require enemas to assist nature; while others who are accustomed to depend on laxatives may require early purgation for relief. Patients who have been dieted before the operation and in whom the anesthetic has disturbed the stomach will have but little substance in the alimentary canal and may do better without a bowel movement for two or three days.

CONCLUSION

It has been my intention in this communication not to go into an exhaustive discussion of the subject of purgation before and after operation, but merely to call attention to the harm that may be done by employing it in a routine way and to the desirability of individualizing the indications. A routine method may be a good thing for a surgeon or a hospital staff to have on record, not as a method to be followed out, but as one to be modified. It may happen to be just right for some cases, and in others it may require modification only in a few particulars and may thus be of time-saving assistance to the one who formulates the directions for each patient, as well as to the one who has to interpret them and carry them out.

112 South Michigan Avenue.

Malarial Pseudotetanus.—A. Castellani (*Arch. méd. Belg.*, August, 1918) has seen a case in Macedonia and three in tropical countries of malaria simulating tetanus. The patients had a normal temperature, with trismus, opisthotonos and undoubted tetanic spasms. In all the cases the examination of the blood and the happy effects of treatment with quinin proved that they were cases of malaria.

A FILTRABLE POISON PRODUCED BY B. INFLUENZAE (PFEIFFER) *

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The clinical course of the present epidemic of influenza has emphasized what appears to be two important points worthy of investigation:

1. The rapidity of onset, suggestive of an overwhelming intoxication, which may be due to a soluble toxin.

2. A marked leukopenia present in most of the cases.

The question of the leukopenia has not, in our opinion, received the attention it deserves, and a succeeding report will deal with that question. The present report deals with the filtrable poison. Although these experiments do not by any means prove that the influenza epidemic is caused by the Pfeiffer bacillus, yet they would seem to indicate this possibility.

Five strains of the influenza bacillus were used in this work. For two of these we are indebted to Dr. Anna Williams; the other three were isolated by us from influenzal pneumonia sputums.

The poison was formed by the growth of *B. influenzae* on several different mediums; the medium, however, with which the most constant results were obtained, was made as follows:

Veal infusion broth was prepared in the usual way. The required amounts of broth were measured into Ehrlenmeyer flasks and sterilized in the autoclave. The final hydrogen-ion concentration should have a p_H of from 8 to 8.2. To these flasks enough sterile defibrinated rabbit's blood was added to make it 10 per cent. of the whole. The flasks were then heated over a water bath at 75 C. until the blood coagulated and settled on standing. This requires from three to five minutes after this temperature (75 degrees) has been reached. The flasks were inoculated with one or two slants of *B. influenzae* to every 50 c.c. of medium.

The poison is produced with remarkable speed. We have obtained very toxic filtrates even after only from six to eight hours' incubation. At this time the organisms are growing very rapidly. Most of our work has been done, however, with eighteen or twenty hours' growth. There is no relation between the amount of growth and poison formation.

After incubation the cultures were centrifugalized, and the supernatant fluid was filtered through a Berkefeld candle. The sterile filtrate was then inoculated intravenously into rabbits.

The poison deteriorates very quickly, even when kept in the ice box. For this reason the toxicity of the poison must be tested, and the experiments made on the same day. If 2 c.c. of a poison killed a medium sized rabbit in from one to three hours, we considered it a good poison. Sometimes rabbits died when injected with 1 c.c. of a poison, but this was not the usual result.

When a rabbit is given a lethal dose of the poison, there is an incubation period of about thirty minutes before any symptoms appear. This is followed by increasing weakness, often accompanied by diarrhea. Death usually occurs within three hours, with or without convulsions.

Immunologic tests were carried out as follows: Rabbits were immunized to multiple lethal doses of the poison. The serum of rabbits that have withstood at least four lethal doses of the poison will protect normal animals against lethal inoculation of the poison. An immunity against a poison produced from any one strain will protect against a poison from any other strain. This protection is shown in two different ways:

A. By mixing the lethal dose of the poison in vitro with the serum before inoculation.

B. By giving the serum fifteen minutes before or fifteen minutes after the injection of the poison.

TABLE 1.—EXPERIMENTS IN VITRO ON RABBITS INJECTED WITH MIXTURES OF INFLUENZA POISON AND IMMUNE SERUM

Rabbit	Weight Gm.	Mixture Injected	Remarks
1	1,450	5 c.c. Poison 9 + 2 c.c. Serum 308	Lived
2	1,530	5 c.c. Poison 9 + 1 c.c. Serum 308	Lived
3	1,500	5 c.c. Poison 9 + 2 c.c. normal serum	Dead 1 hr. 10 min.
4	1,530	5 c.c. Poison 9 + 1 c.c. normal serum	Dead 1 hr. 40 min.
5	1,500	5 c.c. Poison 9	Dead 1 hr. 15 min.
6	1,550	5 c.c. Poison 9	Dead 1 hr. 55 min.

Three average protocols to illustrate these points are given herewith. The mixtures were incubated at 37 C. for half an hour before being injected. Serum 308 was taken from a rabbit which had had eight injections of poison. The rabbit was bled on the eighth day after the last injection. Although 2 c.c. of this poison was the lethal dose in the morning, we used, on account of deterioration, 5 c.c. of it in the afternoon of the same day. This applies also to the protocols given in Tables 2 and 3.

TABLE 2.—EXPERIMENTS ON RABBITS INJECTED WITH INFLUENZA POISON AND INOCULATED WITH IMMUNE SERUM

Rabbit	Weight Gm.	Poison	Serum	Remarks
7	1,360	5 c.c. E	5 c.c. Serum 307	Died 1 hr. 20 min.
8	1,380	5 c.c. E	10 c.c. Serum 307	Lived
9	1,400	5 c.c. E	5 c.c. Serum 308	Lived
10	1,410	5 c.c. E	10 c.c. Serum 308	Lived
11	1,400	5 c.c. E	5 c.c. normal serum	Died 1 hr. 20 min.
12	1,410	5 c.c. E	10 c.c. normal serum	Died 23 hr.
13	1,400	5 c.c. E		Died 1 hr. 55 min.
14	1,440	5 c.c. E		Died 2 hr. 7 min.

Rabbits 7, 9 and 11 were inoculated with the specified serum fifteen minutes before the inoculation of the poison. Rabbits 8, 10 and 12 were inoculated with the serum fifteen minutes after the poison. Serum 307 was taken from a rabbit which had had ten injections of poison. The rabbit had been bled on the tenth day after this last injection. Serum 308 was taken from a rabbit which had had ten injections of poison. It had been bled on the fifth day after this last injection.

TABLE 3.—EXPERIMENTS ON RABBITS INJECTED WITH INFLUENZA POISON AND INOCULATED WITH IMMUNE SERUM

Rabbit	Weight Gm.	Poison	Serum	Remarks
15	1,475	5 c.c. 9	10 c.c. Serum 410	Lived
16	1,450	5 c.c. 9	10 c.c. Serum 410	Died 3 hr. 45 min.
17	1,415	5 c.c. 9	10 c.c. normal serum	Died 1 hr. 35 min.
18	1,475	5 c.c. 9		Died 1 hr. 30 min.
19	1,555	5 c.c. 9		Died 2 hr.

In each case the serum was inoculated fifteen minutes after the poison. Serum 410 was taken from a rabbit which had had eight injections of poison. It had been bled on the seventh day after this last injection.

The following figures, the result of all our experiments, show the value of this serum:

There were seventy animals inoculated with the poison in this series of experiments. Half, that is,

* From the Department of Bacteriology, College of Physicians and Surgeons, Columbia University.

thirty-five, were protected with immune serum either in vitro or in vivo. Of these, twenty-seven (77 per cent.) lived. The other thirty-five were controls, and of these only three (7.5 per cent.) lived.

SUMMARY

It has been found that the influenza bacillus produces a filtrable poison which is lethal to rabbits. This poison is produced with great rapidity. It also deteriorates very quickly. An immunity can be produced against it. The serum of immune animals appears to be antitoxic both in vitro and in vivo.

RECURRENT RENAL CRISES

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I desire to call the attention of urologists and particularly of naval surgeons to a syndrome that came under my observation while stationed at the Naval Hospital at Norfolk, Va., in the winter of 1918.

During the winter of 1917-1918, many United States ships were engaged in convoying troop transports by a method that required the convoying ship to be at sea continuously for about three weeks at a time. Many of these ships were second or third class cruisers of about 3,000 to 5,000 tons displacement. It may be remembered that weather conditions were unusually severe over the North Atlantic during that winter. Gales of great violence were frequent, and much of the time the cold was intense. Such ships often encountered weather that made conditions of life on board very trying, with no possibility of making a harbor for protection from the rough seas and extreme cold. Such living conditions affected all members of the crew.

Often, for days together, it was impossible to cook and serve regular hot meals. Such meals as were served were necessarily of a quality that would convey the maximum of nourishment with the minimum of effort and therefore such as left little waste to be eliminated by the intestine. On account of the cold weather, the natural desire to drink water was in abeyance and many did not think of drinking it when they had no craving for it, which resulted in limitation of fluids. The watches on deck, or below, were performed under most trying conditions and were often prolonged beyond the limits set for fair weather navigation. Sleep was much interfered with and was frequently almost impossible. Attention to personal hygiene was out of the question for days at a time. Even attention to regular movements of the bowels or normal frequency of urination was often neglected. These facts are recited because I believe they explain the sort of syndrome of which I saw many instances.

A patient would be sent to the hospital from some ship on such duty, because of recurrent renal colic, sometimes unilateral but more often bilateral. There were recurrent crises of pain simulating such as might be caused by renal stone. Often, constant, dull pain existed between the more acute attacks. The urine was scanty and of high specific gravity. In most cases it contained neither pus nor blood, but a few patients had recurrent renal hemorrhage. Often calcic oxalate or uric acid crystals of small size were numerous in the centrifugalized sediment. Ureteral catheterization in all cases showed the condition to be renal in that any abnormality observed in the evacuated urine before catheterization would be duplicated in that obtained through the renal catheter.

The cystoscopic inspection of the bladder was normal.

In all cases the renal pelves seemed contracted, since from 5 to 10 c.c. of fluid injected was the extreme limit.

The phenolsulphonephthalein test showed almost normal functional ability both as to time and quantity, except in a few cases in which the excretion was slightly delayed. This test was in all cases nearly equal on the two sides.

Pyelogram roentgen-ray plates, taken in every case with 10 per cent. thorium solution, showed no abnormality, except in one case of unilateral colic in which the renal pelvis on the painful side seemed to lie largely below its outlet but was not dilated.

In several cases the injection of 5 or 6 c.c. of thorium solution brought on a renal colic similar to that for which the patient entered the hospital. This was a very striking circumstance.

From consideration of conditions described and facts observed, I believe the colic was induced by decreased renal function over a considerable period of time. Perhaps the condition may have been one of acute renal spasm with or without acute hyperemia, but without gross anatomic or pathologic change. It is interesting that such a condition can be the cause of renal colic.

Treatment of these cases consisted of rest in bed, light diet, increased ingestion of liquids, diuresis, and mild daily purgation. All patients made a gradual and uninterrupted recovery.

One patient had a return of symptoms on going to sea again, even though he was on a larger ship and encountered calm weather.

Owing to the fact that all patients recovered, no pathologic examination of the kidneys was ever made, and therefore the pathology of this condition can only be surmised.

IDIOPATHIC ENURESIS IN ADULTS

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Nocturnal enuresis in childhood has been thoroughly reviewed in the literature. Concerning the condition in adult life, when no organic neurologic lesion is demonstrable, the literature is meager. Little can be found in most textbooks on neurology when the trouble occurs after the first decade of life; while in the clinical records of large institutions such case histories are without doubt a rarity. Jelliffe and White[1] state that after the third year of life it is an indication of a neurotic disposition, while Osler declares that nocturnal enuresis usually clears up by the end of the first decade.

When, therefore, a group of adult men, in military life, present themselves with this symptom, the conclusion that there is a deliberate attempt to malinger is uppermost in the mind of the observer. But these patients wet their beds or cots consistently. The night attendants in the ward note the dribbling of urine, while the patient sleeps soundly on until morning. In spite of threats, punishments and ridicule, the con-

1. Jelliffe, S. E., and White, W. A.: Diseases of the Nervous System, Philadelphia, Lea & Febiger, 1917.

dition continues unabated, while all such patients show certain constant characteristics. Hence, it becomes inevitable that the conclusion must be forced on the observer that he is dealing with a distinct syndrome, a manifestation of a neuropathic condition.

Military surgeons have described cases of nocturnal enuresis cured by threats of punishment or "special detail" work. In deliberate malingering or slothfulness, these undoubtedly have their effect. But when no simulation exists, the only result is to have the patient redouble his vigilance and to conceal his infirmity by every possible expedient. Then he is returned to duty apparently cured. But with the fatigue of the day's work, he sleeps soundly, does not resort to the various precautionary measures, and awakens in the morning only to find that once more he lies drenched in his own urine. The obnoxious odor, the discoloration of the bedding, etc., call the attention of some officer to his condition, and again he is ordered to the base hospital or to the infirmary. In such cases, the suspicion of malingering cannot be seriously considered. Of course, it is not to be questioned that with the man who reports himself to the regimental surgeon with the usual tale of long treatment at home, deliberate simulation for the purpose of evading further military service may be suspected. But it cannot be denied that he who deliberately lies in his own urine is not only slothful and "good-for-nothing," but a mental defective as well.

In presenting this series of twenty-five case histories of idiopathic enuresis held under observation at the base hospital, Camp McClellan, Ala., it may not be amiss to note at this point certain facts in regard to the care of these men. Every patient was held under observation for at least two weeks; five of the number were admitted to the ward for a second period of observation for the condition. Beyond the protection of the bedding by rubber sheeting, and the restriction of fluid after 5 o'clock in the afternoon, no systematic therapeutic routine was attempted. Bladder irrigations, touching of the posterior urethra with silver nitrate, hexamethylenamin and tincture of belladonna were tried in various cases, but without any amelioration of the condition. In one, a moderate cystitis was present, but the clearing up of this complication was not attended by any change in the severity of the enuresis.

CLINICAL DATA

Age.—These men were from 17 to 38 years of age, the majority being under 25.

Age of Onset.—Twenty-one gave a history of the condition having existed, with short periods of remissions, since early childhood. Of the remaining four, the first patient gave a history of imperative urination since early childhood with nocturnal enuresis for three months prior to admission; the second, following an injury to his back, at the age of 12, but without any evidence of cord irritation at the time of examination, and the third, following a kick in the flank occurring seven months prior to admission (this patient presented evidence of a mild condition of dyspituitarism). In the fourth patient the trouble began at the age of 27 and had existed for eleven years. This patient had a posterior urethral stricture, said by the genito-urinary surgeon not to be venereal in origin. He showed no dribbling of urine during the day. His sister is said to be enuretic.

Family History.—Thirteen patients gave a family history of a similar condition or other neuropathic traits, or of cardiorenal disease. Table 1 shows the incidence of these factors.

Past History.—A history of deep, heavy sleeping was always present, and this was noted repeatedly during the period of observation. Imperative urination during the day was a constant factor. The attempt to retain the bladder contents for even a short period caused considerable pain, and frequently would be attended by incontinence. In several, inability to urinate in the presence of others was noted. Only four of these men gave a history of gonorrheal urethritis, but the enuresis antedated the venereal infection. Periods of remission, never of more than two or three months, were frequent. It was impossible, however, to determine the cause for the return of the enuresis. In none was there obtained a history of epilepsy.

TABLE 1.—FAMILY HISTORY

Case	Father	Mother	Siblings
2	Enuresis until 16	.....	Brother until 7
5	Nephritis	Nephritis	
9	.....	.....	Brother a psychopath
10	Enuresis until 17 (brother until 20)		
11	Inebriate	Died of cardiac disease	
12	.....	Migraine	Sister enuretic
13	Uremia	.....	Two brothers enuretic
16	Inebriate		
20	Nephritis	.....	Sister enuretic (22)
21	.....	.....	Brother enuretic
23	.....	Cardiac disease	Three brothers enuretic
24	Inebriate	(Brother insane)	Five mental defectives
25	Inebriate	Enuresis	Sister enuretic

Physical Condition.—There were present distinct trends toward the vagotonic constitution: cold skin, cyanotic hands, marked localized perspiration, deep set eyes, acneiform eruptions, increased flow of saliva, and diminution of the faucial reflexes. Only one patient showed any trend toward the sympatheticotonic type. Facial asymmetries of fairly marked degree were noted in thirteen, while deviations from the norm in regard to the hard palate were usually present.

Neurologic examination revealed all the deep tendon reflexes to be very active. The faucial reflexes were diminished in intensity. In none was there any evidence of spina bifida occulta. In only one case was multiple sclerosis suspected, there being slight nystagmoid movements on looking to the right or left, absent abdominal reflexes, and enuresis; but otherwise both history and clinical findings were absolutely negative.

Urologic examination gave no further information. Urinalysis was negative, except in the case of cystitis mentioned. Cystoscopy in eight cases gave normal findings, except that there was constantly present an increased resistance to the catheter at the compressor urethrae muscle. It may be of interest to note here one patient, not included in this series, in whom a marked trabeculation of the bladder with a content, under pressure, of only 60 c.c. was found.

Mental Condition.—Psychometric tests were completed in all cases; the Yerkes-Bridges point scale,[2] with a total of 100 credits, was used. The results are given in Table 2.

The usual defects were found to be in memory span, logical reasoning, judgment and in acuity of insight.

2. Yerkes, R. M.; Bridges, J. W., and Hardwick, Rose S.: A Point Scale for Measuring Mental Ability, Baltimore, Warwick & York, 1915.

All the men had worked steadily at various occupations of a manual character when in civil life. None showed any criminal or other psychopathic trends. But the noticeable feature was their blasé manner, almost amounting to indifference, with which they discussed their ailment. Their attitude can be summed up best in their common answer, "I can't help it."

Summary of Clinical Data.—The factors here prepresented may be summarized under four headings: (1) a family history of neuropathic or cardiorenal disease; (2) a history of nocturnal enuresis, existing since childhood, with periods of remission, and always accompanied by imperative urination and by deep sleep; (3) a disclosure on physical examination of vagotonic trends, with negative neurologic and urologic findings, (4) all associated with certain borderline defects in mental efficiency.

COMMENT

There is a constant feature in these cases: the noticeable lack of any gross pathologic findings. The cystoscopist has always found normal bladder walls and content, but has noted the increased spasm of the compressor urethrae muscle. Neurologic lesions of the cord were not present.

Any explanation as regards etiology must be presented, then, on an empiric basis. It may be said that the lack of character formation must be considered; but we find that these men are at a period of life when such conditions should be corrected with ease. Instead, our psychotherapeutic measures have failed to be of any value.

Adler[3] believes that this condition can be grouped under the examples of inherited organ inferiority wherein the compensatory overgrowth of other parts of the organ or of other organs has failed to obscure and arrest the defects resulting. Since organ inferiority manifests itself in the most diverse parts and functions of that organ, we have an explanation of our failure to find any gross pathologic conditions. The evidence presented by the cystoscopist would suggest faulty innervation of the bladder and compressor urethrae muscle. The factor of inheritance per se is not as clear in this group of cases as might be wished for. The fact that nine patients gave a family history of enuresis or cardiorenal disease is in support of this view. In addition, the psychiatric examinations reveal

TABLE 2.—PSYCHOMETRIC TESTS

No. of Cases	Total Credits	Mental Age
4	90 plus	Adult
8	From 75 to 90	From 12 to adult
10	From 65 to 75	From 11 to 12
2	From 56 to 60	From 9 to 10
1	From 40 to 50	From 8 to 9
25		

certain defects present: a fertile ground for the growth or accentuation of any neurosis. Hence, when this is added to the organ inferiority noted, this condition of enuresis, less noticeable in civilian life, becomes, because of the increased monotony, stress and exhaustion of military life, markedly accentuated.

SUMMARY

1. Nocturnal enuresis in adults is a distinct clinical entity, which does not respond to the routine treatment usually effective in younger individuals.

3. Adler, A.: Study of Organ Inferiority and Its Psychical Compensation, 1907.

2. Certain constant clinical findings have been noted.
3. The etiology is obscure. The theory of inherited organ inferiority is applicable.
4. Nocturnal enuresis, idiopathic, is a form of neurosis—a psychophysical defect—wherein the factors of monotony and exhaustion exaggerate the morbid potential present.

DYSTOCIA FROM LARGE BLADDER STONE IMPACTED IN THE PELVIS

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VINITA, OKLA.

From a hasty review of the literature it would appear that serious interference with childbirth by vesical calculi is rather rare. Considering the enormous size which bladder stones sometimes attain, it is surprising that they are not a more common cause of dystocia. That they are not is doubtless due to their comparative rarity in women. Winkle found bladder stone in only one of 10,000 women examined.

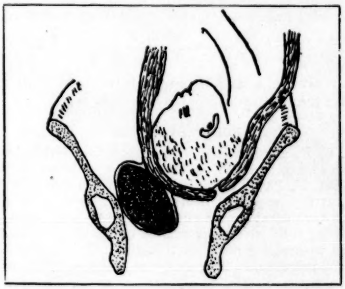

Fig. 1.—Relation of the stone to the head of the fetus.

Pinching of the bladder and anterior vaginal wall with resulting fistula, by stones too small to cause marked obstruction to the descending head, seems to be more common. Thus in Kotschurowa's case referred to by Hirst, labor lasted three days.

At the end of that time a gangrenous tumor protruded from the vulva, which tumor proved to be the bladder and anterior vaginal wall. The midwife in attendance perforated the tumor with her finger, whereupon a calculus 85 grains in weight was discharged.

G. A. Wagner in 1907 collected forty-six instances from the literature and reported one in which a stone 2 by 4 by 6 cm. became impacted between the symphysis and the head. The nature of the obstruction was not recognized until labor had gone on four days, when it proved to be possible to reduce the stone under general anesthesia and effect delivery. Wagner urges the importance of removing bladder stones before childbirth and considers colpocystotomy with immediate suture of the bladder a very satisfactory procedure.

The diagnosis of bladder stone in the parturient appears to be somewhat difficult. It has been mistaken for pelvic exotosis, cervical fibroid or other pelvic tumor, and according to Hirst, in one case at least, cesarean section was performed on account of this mistake.

The case that I report is interesting not so much because of the size of the stone as from the fact that it became impacted down deeply in the pelvis in front of the descending head in such a way as to prevent

Fig. 2.—Stone, actual size.

further progress, and in such position as to give rise to some temporary difficulty in diagnosis.

REPORT OF CASE

Mrs. C. F., aged 30, the wife of a farmer living 15 miles in the country and the mother of two children, went into labor, Oct. 19, 1908. I saw her with her attendant, Dr. L. C. White, at 6 p. m., eight hours after the onset. The patient had had considerable pain and tenderness in the lower abdomen during the last two months of pregnancy, and had been confined to her bed much of that time. Later a history of renal colic five years before and of the passage of a small stone from the bladder two years before was obtained. At the time of examination there was a mass as large as a small orange occupying the right side of the pelvis between the uterus and the lateral pelvic wall. The mass seemed quite fixed, and examination caused considerable pain. The cervix was high, being crowded very much toward the left by the tumor, and dilated to a diameter of about 1 inch.

The most probable diagnosis on first examination seemed that of cervical fibroid. Indeed, the position of the mass as indicated by vaginal touch was almost identical with that of a case of cervical fibroid that I saw a few days later. It was evident that the child could not be born by the natural passage until the obstruction was removed. Accordingly we secured additional assistance and made preparation to do what seemed best when conditions should be more accurately determined under anesthesia. With the patient fully anesthetized we found that the mass could be moved, and its relation to the bladder was determined. A sound introduced into the bladder proved it to be a stone. Removal through the vagina was contemplated, but after some manipulation we were able to push it upward out of the pelvis, after which forceps were applied to the head and delivery easily effected. The puerperium was normal.

The stone was removed by suprapubic cystotomy two months later. It was of the shape of a flattened sphere measuring in its greatest diameter 2¾ inches and weighing 6 ounces.

Even Then.—"Nothing can be more pernicious to the health of the people, than a numerous trade, which, to maintain itself, shall be urging the vent of physic in great quantities to all ages, constitutions and diseases."—R. Pitt, M.D., in "The Crafts and Frauds of Physic Exposed," 1703.

MULTIPLE MYELOMA WITH BONE MARROW PLASMA CELLS IN THE BLOOD

REPORT OF CASE

HARVEY G. BECK, M.D.
AND
STANDISH McCLEARY, M.D.
BALTIMORE

CLINICAL OBSERVATIONS, BY DR. BECK

Owing to the fact that Bence-Jones proteinuria and multiple myeloma are conditions of rare occurrence, one not only should feel justified, but also should feel it a duty to the profession to report individual cases, especially so long as we need more light on the pathologic and clinical features of the disease.

The case herewith reported is of special significance since bone marrow plasma cells were found in the circulating blood by one of us, a condition rarely seen.

An examination of the literature for the history of cases of multiple myeloma makes it evident that the disease, although rare, has not often been recognized. Thirty-seven years elapsed between the time Bence-Jones discovered the phenomenon in the urine, in 1846, and the report of the second case by Kuhne. Fifty years after the discovery, only four authenticated cases were added to the literature.

In the three succeeding years, records of eight cases appeared which were reported by Louis Hamburger,[1] to which he added two cases studied by himself, one a patient of Dr. Iglehart's, the other Dr. Osler's patient.

In 1905, Woods[2] was able to collect thirty instances, while at present the number has increased to about 100.

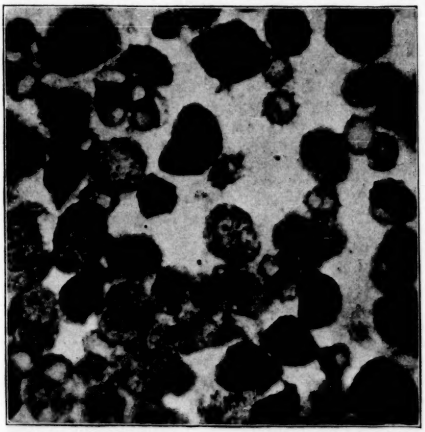

Fig. 1.—Smear from marrow of clavicle, showing large numbers of plasma cells with eccentric nuclei and distinct nucleoli.

It will thus be observed that the disease is much more prevalent than one would have supposed it to be years ago, and that it is gradually becoming more generally recognized.

1. Hamburger, Louis: Bull. Johns Hopkins Hosp. 7, No. 119, 1901.
2. Woods: Chemical and Microscopical Diagnoses, 1905.

So far as we are able to determine, this makes the eighth case reported in Maryland, two of which occurred in my experience. One of these was reported by Boggs and Guthrie.[3]

Bence-Jones proteinuria is not pathognomonic of myelomatosis, nor is myelomatosis always attended by Bence-Jones proteinuria. It has been found in osteomalacia, in bone injury due to a gunshot wound, in lymphatic leukemia, in myxedema, in carcinomatous bone metastases, and in pleural effusion. There appears to be one point in common, namely, extensive involvement of bone marrow, which suggests the possibility of some relationship in our case of a bone lesion in typhoid with a subsequent development of myelomatosis and Bence-Jones proteinuria

REPORT OF CASE

History.—A farmer, aged 55, from Queen Anne County, Md., was referred by Dr. H. G. Simpers, June 24, 1915. At the age of 35 he had pneumonia, and at 50, typhoid fever. He also gave an indefinite history of malaria; otherwise his health had been good. Since the attack of typhoid fever, five years before, he had suffered intermittently from substernal pains. These pains at first lasted several days; they gradually increased in duration to a week or two, and the last attack persisted for three weeks. He was singularly free in summer, but always worse in the spring and fall. He described the pain as burning in character and radiating from beneath the sternum to both shoulders; there was no diurnal or postural influence. However, it was aggravated by the slightest bodily movements. Associated with the pain were dyspnea and a hacking cough without expectoration. There was no dysphagia and no history of gastro-intestinal or genito-urinary disturbances. He had lost about 26 pounds in weight and was progressively growing weaker.

Physical Examination.—The patient was pale, thin and emaciated, and weighed 132 pounds. The eyes were sunken, the lids pigmented, the conjunctivae injected, the sclerae were icteroid, the pupils were even, reacting sluggishly, and arcus senilis was marked. Tophi were present in both ears. The patient suffered with a severe form of pyorrhea alveolaris, a mild chronic pharyngitis, and fissures of the tongue. The cervical lymph glands were slightly enlarged and the thyroid was normal. There were no abnormal pulsations in the neck. The hands were moist, cold and tremulous. Fibrillation was noticed in the muscles of both arms. The brachials were prominent, tortuous and sclerosed, and pulsated forcibly. Atheromatous patches were found in the radials. The pulse was regular, the rate being 84 per minute. The chest was elongated and irregularly flattened. There was a definite swelling of the sternal end of the right clavicle, due to thickening of the bone, and a similar swelling, although less prominent, at the sternal end of the left clavicle. At the junction of the second left rib and sternum there was a circumscribed swelling, fairly regular in outline, measuring about 5 cm. in diameter. These swellings presented rather smooth, even surfaces; they were firm, and not tender to pressure. There was no evidence of crepitation or fluctuation. Superficial veins were large and prominent over the upper anterior thoracic zone, and were especially pronounced over the upper sternal region.

A fluttering pulsation with marked systolic retraction was observed in the epigastrium. There was also systolic retraction in the second left intercostal space and a well defined Broadbent's sign. There was no circumscribed apex impulse, but instead a slight heaving of the chest wall over the entire precordia. Heart dulness was increased to the left. At the apex (sitting) loud to and fro blowing systolic and presystolic murmurs were heard, accompanied by a thrill. These murmurs were distinctly audible posteriorly at the angle of the scapula. In the recumbent posture they were almost inaudible. The aortic sounds were feeble, the pulmonic clear. In both apexes of the lungs breath sounds were impaired and numerous scattered râles were heard below both clavicles. Visceral examination of the abdomen was negative except for a palpable kidney on the right side. Roentgenologically, no definite bone changes were demonstrated; but plates showed enlargement of the heart and numerous large, calcified mediastinal glands, especially on the right side.

The urine was free from serum albumin, but contained a protein that strongly suggested Bence-Jones in regard to its behavior with the heat, nitric acid and acetic acid and potassium ferrocyanid tests. The amount of urine obtained was insufficient to confirm Bence-Jones protein by other tests. A summary diagnosis was made of chronic gout, arteriosclerosis, pyorrhea alveolaris, chronic endocarditis with adhesive pericarditis, and multiple myeloma.

Second Admission.—The patient was not seen again until Nov. 24, 1915, when he was admitted to the Mercy Hospital suffering with acute lobar pneumonia involving the right lung, in addition to his chronic affections. The tumor on the sternum was found to be greatly increased in size. It was soft and somewhat tender to pressure. There was no fluctuation or crepitation. By manipulation or deep breathing a pathologic fracture at the junction of the manubrium and

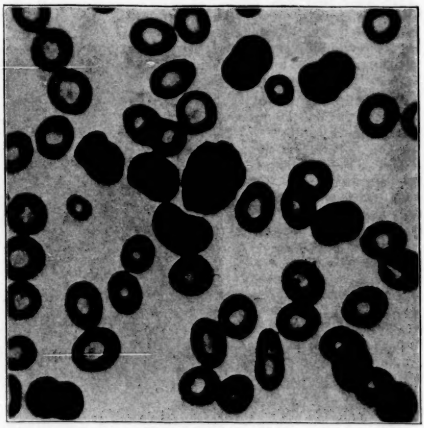

Fig. 2.—Blood smear showing plasma cell with transversely placed nucleus and nucleolus.

glandiolus could easily be recognized. The enlargement of the sternal ends of the clavicles had increased in size, but their consistency was not altered. Additional nodular thickenings were noticed on the third and fourth ribs of the right side in the mammillary line.

Urinalysis.—Dr. Judd, who made a special study of the urine, made the following report: Between 54 C. and 56 C. a white, flocculent precipitate was thrown down, which on boiling almost (but not entirely) disappeared; on cooling from 56 C. this cleared up only partially. When filtered at from 56 C. to 70 C. a small portion at 60, 65 and 70 C. was recoagulated on further heating, showing that not all the albumin was precipitated at one time. When the precipitate up to 70 C. was collected by filtration and heated to 100 C. and again filtered, the clear filtrate became distinctly cloudy on cooling. Nitric acid caused a precipitate that persisted after shaking. The rather atypical findings were attributed to the absence of chlorids dependent on pneumonia. When a strong sodium chlorid solution was added to antiacidified urine, the precipitate was obtainable. Before salting, a definite albumin, as well as albumose, was present. By lessening the degree of salting out the albumin also was precipitated at 100 C., showing the dual presence of albumin and albumose. Microscopically the urine showed numerous fine and coarsely granular casts.

3. Boggs and Guthrie: Am. J. M. Sc. **164**: 803, 1912.

Blood Examination.—The Wassermann test was negative. Cultures revealed a pneumococcus septicemia. The red count was 2,200,000; the white count, 8,800. Differential count revealed: small lymphocytes, 14.3 per cent.; large lymphocytes, 4.3; neutrophils, 73.3; eosinophils, 0.3; neutrophil myelocytes, 1.3; bone marrow plasma cells, 6.6; normoblasts, 1 in 300.

Before the death of the patient the cells here regarded as plasma cells were enumerated as irritation cells. It was not until after necropsy that these cells were identified as similar to those found in the bone marrow.

PATHOLOGIC STUDY, BY DR. MC CLEARY

Necropsy.—Thorax: The sternal end of the right clavicle was much enlarged, and the entire bone was easily crushed. The osseous tissue was much thinned and the marrow a yellowish gray, in areas resembling putty. The sternal end of the first rib was similarly involved. The sternum, from the second to the fourth rib, was thickened and softened and was easily incised with a knife. There was a pathologic fracture of the manubrium. The costal cartilages were nodular.

The right pleura was adherent to the pericardial sac, and both pleurae were adherent to the chest wall. The right lung was entirely consolidated, and microscopically showed lobar pneumonia in a stage of transition from red to gray hepatization. The left lung was edematous, with hypostatic congestion at the base.

The heart weighed 350 gm.; the valves and coronary arteries were normal. There were no atheromatous areas in the aorta.

Abdominal Cavity: The kidneys and liver alone showed any pathologic process. The kidneys showed the changes usually described as chronic diffuse nephritis, tubular degeneration, numerous casts beginning connective tissue increase, and a slight degree of arteriosclerosis.

Liver: A few nodules the size of a pinhead were found. These apparently were minute gummas. The sinusoids of the liver contained the same cells found in the blood and bone marrow.

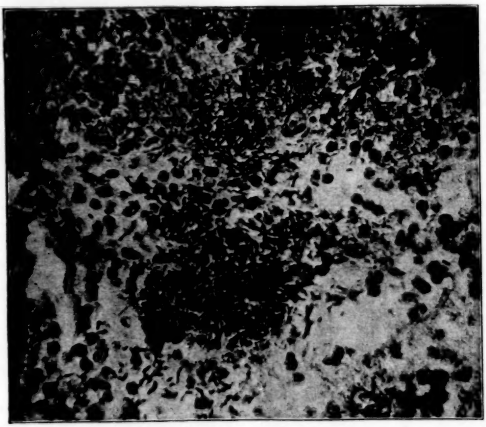

Fig. 1.—Clumps of anthrax bacilli in the submucosa of the intestine; × 480.

No head section was allowed. A careful search failed to reveal any involvement of the skeleton except those parts mentioned—ribs, sternum and clavicle—and no extraskeletal masses could be found.

Smears were made from the affected bones, and the tissue was hardened for sections. The smears were stained with Wright's stain and by indophenol blue to determine if the oxydase reaction could be obtained. After Wright's stain, the striking feature of the slide was the presence, in an overwhelming majority, of cells of an oval shape with an eccentric nucleus placed transversely to the long axis of the cell. The cells contained a distinct nucleolus. The cytoplasm was nongranular and faintly basophilic. The nuclear membrane was distinct, and the chromatin had a definite mural arrangement. The other cells present were those common to the marrow of this tissue. These oval cells with the characteristically placed nucleus and with a nucleolus were usually regarded as bone marrow plasma cells. Measurement of a large number gave 11.3 microns as the average longest diameter of the cells and 7 microns of the nucleus.

When subjected to the indophenol blue synthesis after formaldehyd fixation, these oval cells showed the presence of the oxydase granules. This fact would place this myeloma in the myeloid group, even though the morphology of the cell was that of the so-called plasma cell.

It is to be regretted that all of the blood smears obtained were stained by Wright's or by Pappenheim's stain and that we were unable to use indophenol blue on the cells of the blood that were morphologically identical with those found in the growths. The presence of the tumor cells in such a large percentage in the circulating blood is unique.

ANTHRAX ENTERITIS

THE MORBID ANATOMY AND HISTOLOGY OF TWO CASES AT CAMP DODGE, IOWA

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Captain, M. C., U. S. Army
CAMP DODGE, DES MOINES, IOWA

REPORT OF CASES

CASE 1.—*History.*—A negro private, aged 28, complained of pain in the abdomen five days before entering the hospital. His temperature was normal, and as he did not seem very ill, he was allowed to remain in quarters. Four days later the regimental surgeon found him to be quite ill, with a temperature of 102 F. and great abdominal distention and distress. A tentative diagnosis of intestinal obstruction was made. On arriving at the hospital he was assisted from the ambulance to the receiving ward, seated himself on a chair, and ten minutes later expired. A lesion on his face, later found to be a malignant pustule, had evidently given little discomfort, as the attention of the attending surgeon was not called to it or its character suspected.

Necropsy.—This was held four hours after death. The subject was large and well built. In front of the right ear on the bearded portion of the face there was a dark reddish circular, elevated area 3 cm. in diameter, having a depressed center covered with a firmly attached, brownish scab. The lesion was but slightly indurated, moved freely with the skin over the subjacent tissue, and contrasted but slightly with the black, normal skin. The abdomen was distended.

In the peritoneal cavity were found 4.5 liters (4¾ quarts) of thin, serous, straw colored, slightly cloudy fluid. The peritoneum was hyperemic, the vessels being congested and visible as a network under the serosa. The small intestine was found to be mottled with discrete, purplish red, thickened areas varying in size from 1 to 6 cm. in longest diameter, and oval, having the long axis parallel with the course of the intestine. Over some of these patches the peritoneum was roughened and mottled with grayish exudate. The mesenteric lymph nodes were enlarged and purplish.

When the stomach was opened the rugae were found to be quite prominent. The gastric mucosa was covered with gray, blood-streaked mucus. In the duodenum 3 cm. from the pylorus was found an oval, elevated ulcer covered with black coagulum, the margin of which was elevated, and the center depressed and grayish.

In the intestine, Peyer's patches and the solitary follicles were found to be enlarged, dark red and edematous, with elevated, irregular margins and a slightly necrotic, bile

stained surface. The lesions were irregularly oval and of variable size up to 8 cm. in long diameter, appearing somewhat larger on the mucous than on the serous surface. The inflammatory process extended to the surrounding tissue, which was edematous and infiltrated with blood, and the areas involved were therefore much larger than the anatomic boundaries of the lymphatic tissue. The lesions were found throughout the length of the small intestine. In the jejunum the valvulae conniventes in the vicinity of the lesions were edematous and projected as prominent, rounded, translucent, grayish ridges. Some of them were reddish and had some resemblance to small cherries. Occasional Peyer's patches were surrounded with such formations.

The bronchopulmonary lymph node measured 5 by 3.5 cm. It was partially calcified and contained large pockets of friable caseous material. The tracheal mucosa was reddened and bathed with bloody mucus. A few quiescent tubercles were found in the apex of the left lung and in the lower lobe of the right lung. The heart appeared unchanged. The spleen weighed 179 gm. and was soft and slate colored, and on section the pulp scraped off easily. The malpighian corpuscles appeared as large gray bodies on a dark red background. A small tubercle was found just beneath the capsule. The kidneys showed the appearance of acute nephritis, being very dark red and mottled with minute hemorrhages.

Anatomic Diagnosis.—This was:

1. Anthrax pustule on face.
2. Tuberculous bronchopulmonary lymphadenitis.
3. Solitary tubercles in upper left and lower right lobes of the lungs.
4. Acute nephritis.
5. Acute splenitis.
6. Anthrax enteritis.
7. Acute mesenteric lymphadenitis.
8. Seropurulent peritonitis.

Bacteriologic Findings.—Anthrax bacilli were found in a smear from the face lesion, in the peritoneal exudate, in bile from the gallbladder and in the heart's blood.

Histologic Findings.—Section of Intestinal Lesion: There was an extensive leukocytic infiltration of the entire thickness of the intestinal wall, but the lymphoid tissue was especially involved. Certain areas were very edematous, the cells standing widely apart. Hemorrhagic extravasation was abundant throughout the lesion, but was most marked in a zone just beneath the serous coat and the adjacent portion of the muscular layer. Anthrax bacilli appeared as large gram-positive rods and filaments occurring in enormous numbers in the submucosa and in smaller numbers throughout the section. The large masses of bacilli could be readily seen with the low magnification (× 100).

Fig. 2.—Morphology of the anthrax bacillus in the intestinal wall; × 1,000.

Section of Mesenteric Lymph Node: Edema and hemorrhage were present, and anthrax bacilli were found scattered through the tissue, but appear to have a special affinity for the germ centers, many of these oval areas being thickly packed with the rods.

Section from Kidney: The cortical tubular epithelium was cloudy and granular. Numerous interstitial hemorrhages were found between the tubules. The glomeruli also were hemorrhagic.

CASE 2.—*History.*—A white private, aged 29, noticed a pimple at the angle of his jaw which he picked with his finger and two days later cut while shaving, after which it swelled rapidly. On his entering the hospital next day there was found a lesion 3 cm. in diameter in the center of which was a small ulcer discharging bloody pus, which was found to contain anthrax bacilli. Local improvement was obtained by the use of local antisepsis and the intravenous administration of horse serum, but on the third day after admission he developed epistaxis, nausea, vomiting and abdominal pain, and died on the following day.

Necropsy.—This was held four hours after death. The subject was well nourished. On the right side of the neck below the angle of the jaw was found an indurated area 2 cm. in diameter covered with a dark greenish scab. Behind the right ear was a large edematous protuberance.

The peritoneal cavity contained 600 c.c. of opalescent seropurulent fluid. The serosa of the cecum, ascending and transverse colon was very edematous, translucent, yellowish gray, and thickened to a depth of 15 mm. in certain places. The ascending and transverse mesocolon were also very edematous, and on section exuded clear serum. The mesenteric lymph glands, especially those near the head of the pancreas, were enlarged and purplish. The entire mesentery was very edematous. The duodenum sagged downward from the head of the pancreas toward the promontory of the sacrum 8 cm. below its normal position. Shining through the peritoneal coat of the intestine could be seen numerous oval, purplish patches varying from 1 to 5 cm. in long diameter. They appeared most numerous in the jejunum, but could be found throughout the small intestine.

The esophagus was unchanged. In the stomach were found eight purplish, acuminate, swollen nodules averaging 8 mm. in diameter in the mucosa, some on the rugae and others between them, sharply demarcated from the normal gray membrane. The first and second portions of the duodenum were markedly dilated, the walls at this point being purplish, thickened, edematous and studded with a number of irregularly shaped, elevated nodules varying in size from 5 to 25 mm. in diameter, in some places becoming confluent. The central portion of the surface of the lesions was covered with necrotic membrane. The upper portion of the jejunum was markedly involved, the valvulae conniventes being very edematous, grayish and translucent. Scattered over the mucous membrane were numerous purple elevated nodules averaging 8 mm. in diameter, surmounted by yellowish necrotic tissue. Most of these nodules were found to be enormously swollen solitary lymph follicles, although some of the lesions occurred independently of the lymph tissue. These small lesions were found along the course of the intestine down into the ileum, where it was found that Peyer's patches were outlined by purplish thickened areas which could be seen especially well shining through the serous coat, the overlying vessels of which were hyperemic and formed a distinct network. On the mucous surface, Peyer's patches were less distinct, although there was some thickening, and a dull purple marked their location. In the lower end of the ileum as the cecum was approached, the lesions became fainter, less thick and farther apart. No discrete lesions were found in the mucosa of the cecum or colon, but their walls were very edematous. The spleen weighed 209 gm., and the pulp was soft and diffluent.

Anatomic Diagnosis.—This was:

1. Malignant pustule on face.
2. Acute splenic tumor.
3. Anthrax enteritis.
4. Seropurulent peritonitis.

Bacteriologic Findings.—Anthrax bacilli were found in the heart's blood and peritoneal exudate.

Histologic Findings.—Sections of the intestinal lesions and mesenteric lymph nodes were similar to those of Case 1.

Section of the spleen, stained by the Gram-Weigert method, revealed anthrax bacilli scattered through the pulp.

SYNOPSIS

These two cases present the following salient features:

1. Marked involvement of the first portion of the duodenum.
2. Selective action of the infection for the lymphatic tissue of the intestine, somewhat analogous to typhoid fever.
3. The accumulation of the bacilli in the germ centers of the involved lymph nodes.
4. Great intensity of the inflammatory process, with associated edema and hemorrhagic extravasation.
5. Penetration of the entire thickness of the intestine and invasion of the peritoneum, producing seropurulent peritonitis.
6. The rapidly fatal course of the affection.

The probable mode of transmission of the infection to the intestine was by contamination of the food by the fingers infected by the scratching of the initial lesion induced by the intense itching that usually accompanies the process. The sterilization of the patient's hands before meals or the wearing of rubber gloves is suggested as a useful measure in the treatment of anthrax to prevent the fatal intestinal involvement.

THE EXPERT AND THE ISSUE

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Unhappily it not infrequently transpires that the physician, when acting as expert in medicolegal cases, leaves the witness stand painfully conscious of having failed, perhaps ignominiously, in his attempt to lay his opinion fairly before the court. In this event, he and the attorney who engaged his services alike suffer from a sense of disappointment and discomfiture.

In a brief discussion of medicolegal cases in which either insanity is set up as a defense in a criminal charge or it is sought to prove that insanity, apoplexy or some other disease has destroyed testamentary capacity, it is my purpose to offer hints or suggestions which, if accepted, might in my opinion measurably minimize the liability to such a distressing experience.

By way of introduction to a given case, I hold that it is of cardinal importance that the attorneys who seek his assistance should submit to the expert all facts and information which they have reckoned on as possessing medical significance in support of the contention which they wish to establish. This material should then be thoroughly analyzed and discussed, and a definite understanding reached between lawyer and physician as to the position the latter is willing to attempt to maintain on the witness stand, taking care especially to anticipate what answers might have to be given to questions put in cross-examination; for although a candid expression of his opinion at this initial stage may terminate the expert's further connection with the case, superficial or hasty performance of this preparatory work only too surely invites disaster when the medical witness enters the box.

THE INSANITY PLEA TO A CRIMINAL CHARGE

Those cases may first be considered in which it is claimed for the defendant that he was insane when he committed the particular criminal act with which he stands charged.

The wide variation between the services demanded of the medical expert in the trial of these cases and those required of the clinician when engaged in the examination of a patient should be kept prominently in view throughout. According to my observation, this distinction, if not altogether ignored, rarely receives the recognition which its importance merits.

In the trial of the cases under consideration, the essential question is: Was the defendant insane when a specified act was committed? The definition, "Insanity is a disease affecting the brain so as to cause a change in feeling, thinking and acting which disqualifies the individual for supporting the ordinary relations of life," is one which in practice has much to commend it. Having adopted it as working formula, the alienist should insist on the importance of limiting the inquiry to the discovery of evidence tending to prove that the designated change had or had not taken place. In this sort of investigation it may be held that there is only one insanity, and that it is not material to attempt to determine into what particular group or class its predominating manifestations would properly place it. Thus much unprofitable wrangling over the vexed and illusory problem of classification may be avoided; the obligation to undertake the baffling and hopeless task of elaborating and erecting a clinical entity that shall correspond, satisfactorily, to such terms as dementia praecox, paranoia, manic-depressive insanity, pyromania, or what not, disappears. Similarly it is not material to prove that the defendant's family is or is not tainted or that he himself has or has not suffered from any disease, injury or stress, commonly recognized as an exciting cause of insanity. And in the same category may be placed as immaterial such subjects as pathology, prognosis and treatment.

To obscure or shift the real issue would appear to be a well recognized measure of legal strategy. With a textbook before him, the opposing counsel may attempt to draw the expert into a discussion of subjects of more or less importance clinically and in regard to which the opinions of students are more or less at variance, but which are not material to the question before the court. If by any crafty device the witness can be maneuvered into foreign and at the same time highly speculative and controversial territory, and there drawn into a discussion, the opposing counsel will attempt to maintain in argument that answers conceding that certain topics are open to debate are admissions that the expert is in doubt regarding the real question at issue. As a matter of course, assuming that proper preparation has been made, tactics of this nature will be promptly and duly opposed.

As instances of attempting to shift the issue, two cases may be cited. In the first, in order to secure a verdict for their client, the counsel rested their hopes on showing that he was subject to predisposing, and in the second to exciting, causes of insanity.

CASE 1.—A working man lost all his hard earned savings through having made, as he supposed, a joint investment with a man in whose ability and integrity he reposed confidence. For reasons good and sufficient from his point of view he discovered that he had been heartlessly betrayed; and under circumstances of a supremely exasperating nature, he killed the man who he believed had compassed his ruin. A plea of

insanity was set up in his defense, and his attorneys occupied several days, indeed by far the major part of the whole time taken by them in the examination of witnesses, in attempting to prove the importance of heredity as an etiologic factor in insanity, and that the defendant's grandfather was insane.

CASE 2.—A woman, actuated by hatred and revenge, cunningly contrived and executed a plan involving arson and murder. In conformity with the plea of insanity made in her defense, for several months prior to her trial she was confined in a hospital for the insane, where the uterus and ovaries were removed. At the subsequent hearing, numerous physicians testified that they had examined the exsected organs, found them obviously diseased, and that their condition constituted convincing evidence of the insanity of the woman from whom they had been taken.

Obviously, the obligation to prove that a given individual was insane at a designated time cannot be fairly met by demonstrating ever so conclusively that he was subject to any or all recognized causes. And conversely, neither is evidence intended to prove the absence of cause material when seeking to establish sanity.

As already stated, the line of inquiry should be directed with a purpose of discovering such a change in the individual as will warrant a diagnosis of insanity. This implies gaining an intimate acquaintance with the personal history from early childhood if possible; for the expert must estimate the departure of questionable conduct from that normal to the individual by comparing it with his usual personal characteristics; and this, of course, implies a searching scrutiny of the circumstances or setting of the debatable act or acts.

Lawyers are prone to be governed by the popular fallacy that it is possible to construct a more or less definite[1] mental norm embracing a specified range of moral, emotional and intellectual reaction which may serve as a general standard of comparison, for the purpose of determining the significance of particular conduct as indicating the sanity or insanity of the person who has exhibited it. Thus, failing to recognize that every individual has a mental norm peculiar to himself with which alone any of his questionable acts must be compared, the counsel feels impatient when the expert insists that the previous personal history be fully and minutely developed. He wishes to proceed directly to the task of demonstrating how widely the conduct under investigation is at variance with his conception of a general norm as described above. He is eager to produce witnesses of fact to prove that certain grossly irregular and unconventional acts were committed, and he believes that this proof alone should afford a sufficient foundation for the basis of an expert opinion. Or if, on the other hand, his purpose is to prove the sanity of his client, he attempts to expand the dimensions of what he assumes should be accepted as a standard mental norm so that it will easily include all deportment under scrutiny, and to this end he usually quotes the published eccentricities of various historical characters who, if insane, had probably never been publicly so adjudicated. When, in prosecuting this line of contention, counsel asks if the cited practices or opinions denoted the insanity of the person to whom they were attributed, the expert witness may logically reply that such a question could not be fairly answered unless a very full and minute record of the individual's personal history was available.

1. Mental Norm is proposed as a convenient term by which to designate normal emotional, moral and intellectual reaction.

Though the suit was a civil action, the following case may be briefly cited to illustrate my contention that, in order to establish a charge of insanity, the cardinal issue is to prove that the person in question has undergone certain changes in feeling, thinking and acting:

CASE 3.—The widow and surviving children of a gentleman who had risen from obscurity to a position of national prominence in industrial and financial circles attacked his will, charging insanity. Perodic debauches, when he would consort exclusively for perhaps a week or more with disreputable people of both sexes exercising no restraint in matters of sexual or alcoholic indulgence, were relied on by the prosecution as sufficient to prove the contention. The testimony of the widow who had married the testator when both were quite young, suffering under a keen sense of lifelong neglect and humiliation, was voluble, minute and convincing when describing the reprehensible practices of her deceased consort; among other statements she testified that she had conducted very searching investigations which had demonstrated conclusively that he had gone on these "high sprees" throughout the whole course of their married life, and even prior to their marriage. Since impairment of business sagacity or any other evidence of derangement of the mental faculties was not claimed, in order to win his case, it was necessary for the counsel for the defense merely to lead the witness on cross-examination to reiterate her direct testimony, which showed conclusively that the periods of moral laxity that were being offered as evidence of the testator's insanity were nothing more than instances of the practice of a lifelong habit.

The medical expert should be careful not to permit the developing fascinations which not infrequently appear in the progress of a case to induce him to invade the proper province of the lawyer and attempt to direct how his special contribution shall be brought into requisition during the course of the trial. When he has critically weighed and sifted all available evidence with reference to its medical significance, and explained clearly to the counsel what position he will undertake to maintain or direct, as well as what he will be obliged to admit on cross-examination, the expert may fairly claim to have discharged his responsibility. For on reflection it seems altogether probable that in the examination of witnesses and in argument, an experienced and well qualified barrister is much better able to judge just how such information as the medical witness may impart to him can be used to advantage than would the expert himself.

In legal practice, many formalities have to be observed which appear superfluous to the layman; but investigation will usually disclose the fact that such arbitrary and minute methods of procedure are essential to the preservation of some basic principle of law or practice; and perhaps it is only fair to allow that some of the proposed amendments submitted by members of our profession to improve methods long in vogue in the conduct of medicolegal cases clearly demonstrate that their proponents have not duly recognized the importance of yielding to these fundamentals. The expert is naturally impatient to have the facts and opinions that he is prepared to present submitted frankly and directly to the jury; the trial lawyer, on the other hand, in the interest of his client must take into account a variety of considerations in the introduction of evidence. In selecting the jury, the personal characteristics of his experts as well as the testimony he expects from them should, no doubt, strongly influence his choice; for, obviously, before going into action a prudent combatant would set his target with due reference to the range of his ordnance.

THE QUESTION OF TESTAMENTARY CAPACITY

To prove ever so conclusively that a person has suffered one or more strokes of apoplexy, or has been afflicted with arteriosclerosis or any other disease, does not establish his testamentary incapacity, no matter what may be said by physicians of the symptoms associated with these various disorders. The essential issue to be met in these cases is, after the construction of an individual mental norm as outlined above, to determine to what extent the terms of the will in question are consistent with this. As has already been stated when considering cases of insanity, so in these, the proper elaboration of this norm is a work of cardinal importance and may demand the exercise of the utmost penetration, perseverance and patience on the part of counsel. It should not be hastily or superficially performed, for when completed it furnishes an instrument which must serve the expert as a measure with which to square his opinion as to the mental status of the individual under investigation.

CASE 4.—In a suit brought to set aside the will of a wealthy widow, who died of pneumonia at the age of 63, it was charged that a previous apoplectic stroke had impaired testamentary capacity, though a convincing history of the attack was not available. A positive diagnosis of arteriosclerosis had been pronounced, however, and this was adopted by the counsel for the plaintiffs as their main point of attack. At the trial, several days were consumed in the examination of expert witnesses to prove the etiologic relation of arteriosclerosis to apoplexy.

CASE 5.—In a similar case in which a competent diagnosis of a stroke of apoplexy with severe aphasia was in evidence, the counsel for the plaintiff appeared to pitch their main hope of success on being able to maintain the contention that the designated symptom invariably implied some degree of mental impairment.

In each of these cases, the counsel for the plaintiff directed comparatively little effort to the purpose of showing to what extent the terms of the wills under investigation were inconsistent with the mental norms of the testators, which, of course, was the sole issue.

Finally, in the trial of medicolegal cases in which insanity is set up as a defense in a criminal charge, or in which the claim is made that a lesion or disease of the brain has impaired or destroyed testamentary capacity, the evidence as to fact most material is that tending to define and establish, on the one hand, the mental norm of the given individual, and, on the other, that which constitutes the subject of controversy, one side maintaining that it conflicts, and the other that it is consistent with this delimited personal standard. To give the court the benefit of his opinion as to the significance of this debated evidence is the peculiar province of the medical expert. Incidentally, it is true, in explaining how he has reached his stated conclusions he may refer to matters of clinical moment; but any such incidental reference should not be permitted to attain a position of such relative prominence as to obscure or shift the main issue.

Freely admitting that in the medical, as in all other professions, dishonest members may be found, and that such individuals actuated solely from motives of cupidity may pose as expert witnesses, nevertheless I hold that the excoriating denunciations of medical experts and their testimony, which have from time to time emanated from the bench and have been so prominently quoted in textbooks as to encourage an attorney to bandy the term "expert" as a by-word whenever it suits his purpose to do so, are in no small degree chargeable to negligence on the part of the witness to make proper preparation before going on the stand.

If, however, the physician has examined the case carefully and arrived at a clear understanding with counsel in charge as to the scope of his testimony, he may hope to leave the courtroom with the comforting assurance that he has not only succeeded in getting his opinion fairly before the court, but that he has neither disappointed the attorney who engaged his services, nor compromised the credit or dignity of his profession.

GAS BACILLUS INFECTION IN AN ARMY CAMP

REPORT OF CASE

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Infection with *Bacillus aerogenes-capsulatus* has been so common on the battlefields of France that not to find it in a wound is the exception, not the rule. In this country, however, where the land has not been so intensively cultivated and manured for generations, infection with this organism is seen only here and there. Conditons under which it occurs and the rarity of the infection make it always of interest to the physician and surgeon.

The following case occurred under rather interesting circumstances during the epidemic of influenza and complicating pneumonia at Jefferson Barracks, Mo.:

REPORT OF CASE

H. A., recruit, aged 23, a blacksmith from a small town in Georgia, was drafted into the service about October 12 at Jefferson Barracks, Mo. He was taken ill with influenza during the prevailing epidemic, and was admitted to the hospital, October 17. There was nothing in the family or past history of disease of any interest at the time. He had always been a healthy, strong fellow, carrying on his vocation without interruption. His present illness apparently dated while he was en route to the barracks. One week before he was admitted, he noticed that he had a headache, cough, pains in the chest, lameness in the back and muscles, some discharge from the nose, and a slightly sore throat. On admission to the hospital his general condition was good. He was a rather powerfully built man. There was a slight redness of the throat, slight enlargement of the cervical lymph glands, infection of the vessels of both conjunctivae, and a heavy dull look about the eyes. The temperature was 102.6, and the pulse 84 on admission.

The patient had a sharp attack of influenza, and developed bronchopneumonia, which involved practically the whole lower lobe of the right lung on the 19th. During the period of severe illness, he was given hypodermics of strychnin and caffein sodiobenzoate. October 23, he was in very good condition, and hypodermic medication was gradually being withdrawn. He complained to the nurse that his shoulders and arms were quite painful as the result of numerous injections; consequently she injected caffein sodiobenzoate solution subcutaneously into the calf of the right leg about 6 p. m., October 22.

The patient made no complaint until the next morning, when he stated that his leg was sore, and the ward surgeon ordered hot dressings put on the leg. The patient did not complain very much more, and an examination of the leg at the time showed some swelling and redness, with the skin rather tense. Not having any such infection in mind as the gas bacillus, the ward surgeon did not examine the leg again until the morning of the 24th. The condition then was so alarming that he reported it to me at once, and I examined the part.

At that time the patient complained of no pain, and was lying quietly in bed. His right lower leg was tremendously swollen, tense, bluish-black, and with several blebs, varying in size from 1 to 6 cm. in diameter, and filled with dark reddish fluid. The foot was swollen and blue, and the toes were also somewhat swollen, blue and cold. Above the knee the leg was swollen, the color being a reddish purple, gradually fading into a dull reddish to about the junction of the middle and lower thirds of the thigh, where a sharp raised irregular line of demarkation was present. The tissues of the calf of the leg were tense, and crepitated on pressure. There was no evidence of any wound. The patient's appearance at that time was one of profound toxemia, with sunken eyes and anxious expression, the temperature being 103, and the pulse 120 and somewhat thready. A mere glance at the part was sufficient to make a diagnosis of gas bacillus infection, and the patient was at once transferred to the surgical department, where multiple linear incisions were made in the calf of the leg and in the thigh. As soon as the tissues of the calf were cut, the part burst open, exuding frothy, reddish fluid with a very foul odor. The tissues were completely destroyed, the muscles having a dark necrotic appearance. The patient died that afternoon. The body was at once removed to the morgue, as much blood as possible was drained out, and 3 liters of embalming fluid were at once injected. In spite of this the tissues swelled and the body became discolored, presenting a most repulsive appearance. Postmortem incisions showed complete necrosis of the muscles of the calf down to the bone. The bacteriologic examination of the contents of the vesicles and of the bloody, foamy fluid in the incision, and smears of pieces of necrotic muscles showed numerous typical short, thick, encapsulated bacilli. Inoculations were made anaerobically into boiled agar, and typical pure culture of *B. aerogenes-capsulatus* was obtained showing also gas formation in the medium.

COMMENT

This case presents one of the fearful accidents which happen once in a great while and for which no one on the staff of the hospital can be blamed. From the same tube containing the tablets of caffein sodio-benzoate, other hypodermic injections were given to other patients. All the tablets in this particular tube had been used and the tube had been thrown away before the diagnosis was made, so that no opportunity was given to examine the contents of the tube for the presence of the gas bacillus.

The question naturally arises at once, Where did this infection originate? On going over the history carefully, it seems to us that the only explanation possible is that this man carried on his person spores of the gas bacillus. He came from a small town in Georgia and was a blacksmith by occupation. Naturally a man from such a place, in such work, was dealing constantly with animals, particularly horses, and the very nature of his work exposed him to contamination from manure on his lower legs. He had had on both arms a number of hypodermic injections, with no resulting infection. However, the very first injection under all aseptic precautions, in the calf of his leg, at once gave rise to a virulent gas bacillus infection. There is no doubt in our minds that this man's occupation was the indirect cause of his death. It emphasizes anew the well known fact that too little attention is paid on the part of physicians and nurses to the occupation of the patient. Had it been realized that this man was a blacksmith, both the ward surgeon and the nurse might have hesitated to inject anything into the lower leg because of the rare chance of inducing some virulent infection with an organism which was present on the skin, as an incident to his occupation.

INFLUENZA AND INFLUENZAL PNEUMONIA AT FORT RILEY, KANSAS

FROM SEPT. 15 TO NOV. 1, 1918

WILLARD J. STONE, M.D. (TOLEDO, OHIO)
Major, M. C., U. S. Army; Chief of Medical Service, Base Hospital

AND

GEORGE W. SWIFT, M.D. (SEATTLE)
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FORT RILEY, KAN.

At the time of the epidemic of influenza[1] and influenzal pneumonia, the military population of the United States Reservation at Fort Riley was 63,374, distributed as in Table 1.

The total number of cases of influenza were divided as shown in Table 2. The influenza incidence for the population of the military reservation was 23.9 per cent.

As will be observed in Table 3, 2,624 instances of pneumonia occurred during the epidemic, of which 2,496 were definitely traceable to influenza.

TABLE 1.—MILITARY POPULATION AT FORT RILEY

	No.
Camp Funston (10th Division), average strength of command	53,027
Fort Riley Post	4,902
Medical Officers' Training Camp	4,145
Base hospital	1,300
Total	63,374

TABLE 2.—CASES OF INFLUENZA

	No.
Treated at camp hospitals, Camp Funston	5,368
Treated at camp hospitals, Medical Officers' Training Camp	697
Treated at base hospital	9,105
Total	15,170

TABLE 3.—CASES OF PNEUMONIA

	No.
Recovered and returned to duty	690
Convalescent	599
Partially convalescent, Nov. 1	329
Empyema (not carried as pneumonia but resulting from epidemic)	65
Deaths from pneumonia	941
Total	2,624

The largest number of influenza and pneumonia patients admitted to the base hospital was on September 30, when 785 were received. The largest total number of patients in the hospital was 5,666, October 8, of whom 2,951 had influenza and 719 influenzal pneumonia. The largest number of pneumonia patients at one time under treatment in the base hospital was 1,338, October 15, as shown in the accompanying chart. The incidence of pneumonia among influenza patients was 17.2 per cent (2,624 in 15,170).

Varying degrees of lung involvement associated with bronchitis occurred among all influenza patients. The evidence in many instances appeared insufficient to warrant a diagnosis of pneumonia, but it must be conceded that the differences were rather of degree than of kind. It is extremely probable that many more influenza patients had patches of lobular pneumonia than were diagnosed as having them, progressing rapidly to recovery in seven or eight days. We have no evidence from this series that death occurred in influenza except from pneumonia or its complications.

The total number of deaths from pneumonia during the epidemic was 941, a pneumonia mortality rate of

1. The term "influenza" is used in the commonly accepted sense to cover the recent epidemic of acute respiratory disease, for the invasion of which B. influenzae, or an unknown virus, may be responsible.

35.8 per cent. During this period ninety-five deaths from pneumonia occurred in which there appeared to be no evidence of preceding influenza. It is reasonable, however, to assume that influenza was the contributing cause of the acute respiratory infection. The total death rate as a result of influenza was 6.2 per cent.

The death rate from pneumonia did not reach its height until about one month after the epidemic began. The largest number of deaths (eighty-one) occurred October 13.

Among 941 fatal instances of pneumonia, the admission diagnoses are given in Table 4 and the final clinical diagnoses in Table 5. The average length of illness in the hospital before death was 7.3 days, and the average length of hospital residence for the recovered patients, 21.6 days.

TABLE 4.—ADMISSION DIAGNOSES IN NINE HUNDRED AND FORTY-ONE FATAL INSTANCES OF PNEUMONIA

Diagnosis	No.
Influenza	495
Pneumonia	351
Measles	43
Pleurisy	4
Other conditions	48
Total	941

TABLE 5.—FINAL CLINICAL DIAGNOSIS IN NINE HUNDRED AND FORTY-ONE FATAL INSTANCES OF PNEUMONIA

Diagnosis	No.	Per Cent.
Lobar pneumonia:		
Right lung	201	21.4
Left lung	129	13.7
Right and left	162	17.2
Indeterminate	225	23.9
Total	717	76.2
Bronchopneumonia	224	23.8
Total	941	100.0

TABLE 6.—FINAL CLINICAL DIAGNOSES IN SIX HUNDRED AND NINETY RECOVERIES FROM PNEUMONIA

Diagnosis	No.	Per Cent.
Lobar pneumonia:		
Right lung	210	30.4
Left lung	163	23.6
Right and left	37	5.4
Indeterminate	59	8.6
Total	469	68.0
Bronchopneumonia	221	32.0
Total	690	100.0

TYPES OF INFECTION

Table 7 shows the prevailing types of infection reported by the laboratory for 928 specimens of sputum examined during the epidemic. Since cultures and type determinations were made only for patients with pneumonia or those with suspected pneumonia, the table represents the types of respiratory infection recognized during the epidemic. Because of the labor involved it was impossible to secure routine specimens for all patients.

Among seventy-seven fatal instances of influenzal pneumonia, the organisms isolated prior to death were as given in Table 8.

Among 163 instances of influenzal pneumonia in which the patients recovered, the organisms isolated were as given in Table 9.

NECROPSY FINDINGS

In a series of fifty-five necropsies, lobar pneumonia was present in eighteen instances, or 32.7 per cent.; bronchopneumonia in fifteen instances, or 27.2 per cent.; while lobar pneumonia and bronchopneumonia were found combined in twenty-two instances, or 40 per cent. This large percentage of combined lobar pneumonia and bronchopneumonia (massive pneumonia) was more marked than had been earlier observed in a series of more than 200 pneumonia necropsies during the same year.

In lobar pneumonia, both the left and the right lungs were involved in 23.6 per cent.; the right lung alone in 5.4 per cent., and the left lung alone in 3.6 per cent. The various pathologic lesions are shown in Table 10.

TABLE 7.—LABORATORY REPORTS ON ALL SPUTUM EXAMINED

	Number	Per Cent.	
Pneumococcus Type I	70	7.6	
Pneumococcus Type II	58	6.2	
Pneumococcus Type III	55	5.9	62.6
Pneumococcus Type IV	329	35.4	
Pneumococcus Type II or IV*	69	7.5	
B. influenzae	32	3.4	
B. influenzae and pneumococcus Type IV	128	13.9	18.7
B. influenzae and other organisms	13	1.4	
Streptococcus hemolyticus and other organisms	5	0.5	4.8
Streptococcus hemolyticus	40	4.3	
Nonhemolytic streptococcus	49	5.2	
Other organisms, not specific	80	8.6	
Total	928	100.0	

* Diagnostic Type II serum was not available for a period of about 8 days.

TABLE 8.—SPUTUM CULTURES IN SEVENTY-SEVEN FATAL INSTANCES OF INFLUENZAL PNEUMONIA

	Per Cent.
Pneumococcus Type I	11.6
Pneumococcus Type III	5.2
Pneumococcus Type II or IV	60.0
B. influenzae	5.2
Nonhemolytic streptococcus	7.7
A gas-producing bacillus*	9.0
Staphylococcus albus	1.3

* Not the bacillus of Welch.

TABLE 9.—SPUTUM CULTURES IN ONE HUNDRED AND SIXTY-THREE INSTANCES OF INFLUENZAL PNEUMONIA WITH RECOVERY

	Per Cent.
Pneumococcus Type I	7.9
Pneumococcus Type II	20.0
Pneumococcus Type III	7.3
Pneumococcus Type IV	50.0
Nonhemolytic streptococcus	11.0
Staphylococcus albus	3.0

PATHOLOGY

General Pathology.—The most striking involvement of organs usually not particularly associated with the pathology of pneumonia has been emphasized in this series. This refers particularly to the brain, the sinuses, the middle ear and the myocardium. It will be noticed that, despite the prevalence of the streptococcus at necropsy, only eight instances of so-called interstitial pneumonia were found in the series of fifty-five necropsies. We believe, from an experience in a series of 200 cases of pneumonia of interstitial type last March and April, that the pathologic picture depends much on the time of death, the time of death being largely dependent on the systemic invasion of the tissues by the infection. If the pneumonia is essentially streptococcic, and early systemic invasion occurs, death occurs early, with the pathologic picture of interstitial pneumonia. If streptococcic systemic invasion occurs later, for reasons not explainable except on the basis of varying antecedent types of associated infection or specific resistance, death occurs later and the pathologic picture no longer shows interstitial pneumonia but shows massive involvement brought about through the confluence of many areas of peribronchial infiltration involving many lobules and eventually entire lobes. The difference is one of degree rather than of kind. In this series of influenzal pneumonias the interstitial type was uncommon, while

massive involvement of both lungs was frequently seen. As will be noticed under necropsy cultures, the streptococcus was the preponderating type of infection. Systemic invasion occurred late, since the average stay in the hospital before death was more than seven days.

It will be noticed that, despite the difficulties in the diagnosis of the type of pneumonia before death, the clinical and necropsy findings were in close accord in that bronchopneumonia was diagnosed clinically in 23.8 per cent. and found at necropsy in 27.2 per cent.; lobar pneumonia was diagnosed clinically in 76.2 per cent. and found at necropsy in 72.6 per cent.; while the combined forms of massive pneumonia were diagnosed as indeterminate clinically in 23.9 per cent., and at necropsy were found to occur in 40 per cent.

TABLE 10.—PATHOLOGIC LESIONS IN INFLUENZAL PNEUMONIA, BASED ON FIFTY-FIVE NECROPSIES

	Number	Per Cent.	
Lungs:			
Lobar pneumonia	18	32.6	
Bronchopneumonia	15	27.2	
Combined lobar and bronchopneumonia (including eight instances of interstitial pneumonia)	22	40.0	
Bronchi:			
Bronchiolitis purulenta	14	25.4	
Pleura:			
Pleurisy, fibrinous acute, right	3	5.4	
Pleurisy, fibrinous acute, left	3	5.4	
Pleurisy, fibrinous acute, bilateral	6	10.9	
Pleurisy with effusion, right	11	20.0	
Pleurisy with effusion, left	2	3.6	
Pleurisy with effusion, bilateral	2	3.6	
Pleurisy, suppurative, right	1	1.8	
Pleurisy, suppurative, left	2	3.6	
Pleurisy, suppurative, bilateral	1	1.8	
Pneumothorax	1	1.8	
Heart:			
Dilatation,* right (associated with parenchymatous changes)	31	56.3	
Dilatation, both ventricles	7	12.7	
Pericarditis, serous	1	1.8	
Pericarditis, hemoserous	1	1.8	
Pericarditis, fibrinopurulent	3	5.4	
Kidneys:			
Nephritis, parenchymatous, acute	23	41.8	
Congestion, acute	1	1.8	
Nephritis, diffuse, chronic	4	7.2	
Cloudy swelling	20	36.3	
Liver:			
Cloudy swelling	34	61.8	
Fatty degeneration	2	3.6	
Biliary pigmentation	4	7.2	
Emphysema:			
Subcutaneous, mediastinal and mesenteric	8	14.6	
Peritoneum:			
Peritonitis, localized	1	1.8	
Peritonitis, purulent, acute	1	1.8	
Brain (total number examined 41):			
Edema	9	21.9	
Meningitis, subacute, serous or purulent	4	9.7	80.4
Meningitis and edema	20	48.8	
Sinuses:			
Sphenoiditis	28	68.3	
Ethmoiditis	13	31.7	
Frontal sinusitis	2	4.9	
Ears:			
Otitis media and mastoiditis	17	41.4	

* The term "dilatation" refers to a relaxed and thinned condition of the walls of the ventricles, associated with increased size and increased patency of the valvular orifices. Definite parenchymatous degenerative changes existed in the myocardium in many instances.

Among the associated changes, chronic tuberculosis was present, involving the lungs and glands of the hilum in five instances, or 9 per cent. Acute endocarditis was not observed. Substernal pus pockets, so frequently seen in streptococcus pneumonia following measles, were absent. Pulmonary thrombosis occurred in one instance involving the right branch of the artery and extending with many ramifications into the smaller branches. The patient lived twelve hours. At necropsy the left femoral vein contained a thrombus occupying about 6 inches of its lumen. One sudden death occurred during sleep, five days after convalescence from pneumonia. The necropsy revealed enormous dilatation of the right ventricle; the heart apex was in the left anterior axillary line, the right border four finger-breadths to the right of the sternum. Thrombosis of the anterior tibial artery occurred in two instances subsequent to pneumonia followed by dry gangrene of the affected foot. In one of these patients about a week after a Chopart amputation of the foot, a partial pulmonary thrombosis occurred involving the left pulmonary artery, with an area of consolidation posteriorly (tubular breathing and whispered voice) about 10 cm. square, due to the infarction. Bloody expectoration was delayed for about forty-eight hours. Sudden dyspnea with rapid heart rate and moderate cyanosis occurred coincident with the physical findings. Recovery occurred.

Brain Pathology.—Edema: Edema of the brain, as observed in this series of necropsies, was marked. The arachnoid was widely separated from the pia. The cerebral vessels were distended; the ventricles were dilated; the optic nerve sheaths were so separated as to appear like funnels about the nerves. In some cases a plastic exudate appeared along the vessel margins; cultures of the exudate were taken in only a few instances. These cultures revealed pneumococci.

Meninges and Ventricles: The meningitis was of the subacute basilar type. It was not always present; but when edema was marked, it was invariably associated with a slight plastic exudate. The dura in some instances clung to the arachnoid, especially along the base of the brain. The exudate associated with the edema formed a mat about the greatly distended cerebral vessels. This was especially noticeable where the choroidal plexus had its origin along the under surface of the velum interpositum. This "basilar mat" of vessels and exudate was thickened and gelatinous in those cases in which distention of the ventricles was most marked. The veins of Galen were matted with the plexus. The underlying aqueduct of Silvius showed partial occlusion; its roundish shape was flattened. The distention of the lateral ventricles seemed to be due to this "basilar mat" of vessels and exudate. The outflow, through the veins of Galen, was blocked because of this exudative process. This accounted for part of the distention of the ventricles, while failure to relieve the distention by spinal puncture could be attributed to the occlusion of the aqueduct of Silvius. In no case were hemorrhages found in the basilar nuclei.

Sinuses: After removal of the brain, the dura of the base was examined for inflammation due to extension from the sinuses and middle ear. In no case could any connection be determined. The sphenoid was approached from the sella after removal of the pituitary body. In twenty-eight cases (68.3 per cent.), pus was present; in some it was under great pressure and drained for several minutes, while in others it was scanty. That it was a frequent complication early in the infection was proved; but that it was always present or that it was the primary localizing point of infection was not found true in this series of cases. The prevailing type of infection was a hemolytic streptococcus, which was present singly or in combination in 46.4 per cent.

The ethmoid sinus was involved on one or both sides in only thirteen cases (31.7 per cent.), a relatively small number; but this percentage increased during the epidemic. The frontal sinus was infected in only two cases. A rudimentary frontal sinus on one or the other side was not uncommon. The prevailing type

of infection was a hemolytic streptococcus, which was present singly or in combination in 25 per cent.

The Middle Ear and Mastoid.—In seventeen cases (41.4 per cent.), either one or both middle ears were involved. In two cases, an acute congestion was noted. In the others, a thin, yellow pus filled the cavity as well as the mastoid cells. There was no bone necrosis in the mastoid, even in cases of several days' duration. On section, the pus drained freely, leaving glistening surfaces. The drum membrane was apparently normal. The amount of pus that would drain into the cranial fossa was surprisingly large in quantity. The absence of bone infiltration was perhaps the most surprising feature. Extension of the infection to the cells of the mastoid was present in every case examined. The prevailing type of infection was a hemolytic streptococcus, which was present singly or in combination in 35.3 per cent.

TABLE 11.—NECROPSY CULTURES

	Times Isolated	Per Cent.
Lungs (number of cultures examined, 51):		
Pneumococcus	11	21.5
Pneumococcus and B. influenzae	13	25.5
Pneumococcus and Streptococcus hemolyticus	1	2.0
Pneumococcus and Strept. hemo. and B. influenzae	3	5.8
Pneumococcus and nonhemolytic streptococcus	1	2.0
Pneumococcus and Staphylococcus	1	2.0
Streptococcus hemolyticus	14	27.4
Streptococcus hemolyticus and B. influenzae	3	5.8
B. influenzae	1	2.0
B. influenzae and M. catarrhalis	1	2.0
Nonhemolytic streptococcus	1	2.0
Staphylococcus	1	2.0
Peritoneum (number of cultures examined, 2):		
Pneumococcus	2	100.0
Pleural fluid (number of cultures examined, 26):		
Pneumococcus	6	23.0
Pneumococcus and Streptococcus hemolyticus	1	3.8
Pneumococcus and B. influenzae	1	3.8
Streptococcus hemolyticus	16	61.5
Streptococcus hemolyticus and B. influenzae	1	3.8
Nonhemolytic streptococcus	1	3.8
Spleen (number of cultures examined, 11):		
Pneumococcus	5	45.4
Streptococcus hemolyticus	5	45.4
B. influenzae	1	9.0
Heart's blood (number of cultures examined, 30):		
Pneumococcus	11	36.6
Pneumococcus and Streptococcus hemolyticus	1	3.3
Streptococcus hemolyticus	14	46.6
Streptococcus hemolyticus and B. influenzae	2	6.6
Nonhemolytic streptococcus	1	3.3
Diplococcus, type undetermined	1	3.3
Spinal fluid (number of cultures examined, 3):		
Pneumococcus	2	66.6
Streptococcus hemolyticus	1	33.3
Sphenoid sinus (number of cultures examined, 28):		
Pneumococcus	7	25.0
Pneumococcus and Streptococcus hemolyticus	3	10.7
Pneumococcus and B. influenzae	7	25.0
Streptococcus hemolyticus	5	17.8
B. influenzae	1	3.5
B. influenzae and Streptococcus hemolyticus	2	7.1
B. influenzae, Pneumococcus and Strept. hemo.	3	10.8
Ethmoid sinus (number of cultures examined, 12):		
Pneumococcus	3	25.0
Pneumococcus and B. influenzae	5	41.7
Pneumococcus and Streptococcus hemolyticus	1	8.3
Pneumococcus and nonhemolytic streptococcus	1	8.3
Streptococcus hemolyticus	1	8.3
Streptococcus hemolyticus and B. influenzae	1	8.3
Ear and mastoid (number of cultures examined, 17):		
Pneumococcus	2	11.7
Pneumococcus and Streptococcus hemolyticus	3	17.5
Pneumococcus and B. influenzae	5	28.4
Streptococcus hemolyticus	2	11.7
B. influenzae and M. catarrhalis	2	11.7
B. influenzae, M. catarrhalis and pneumococcus	1	5.8
Nonhemolytic streptococcus and M. catarrhalis	1	5.8
B. influenzae, pneumococcus and Streptococcus hem.	1	5.8
Tissue cultures (number of cultures examined, 8); subcutaneous and mediastinal emphysema:		
Pneumococcus	1	12.5
Streptococcus hemolyticus	2	25.0
Nonhemolytic streptococcus	1	12.5
Micrococci, type undetermined	1	12.5
Gas-forming bacillus*	3	37.5

* An unknown bacillus isolated in all from 9 cases by Major Oscar F. Broman, M. C., chief of the laboratory service, was frequently obtained by cultures of tissues from the mediastinum, neck, chest and mesentery, in which an unusual development of gas formation had occurred during the course of the pneumonia. Major Broman has thus described the organism: Morphology: rod-shaped with rounded ends; length from 1 to 6 microns; central spores were formed in forty-eight hours' growth. Stain: gram-positive; also stains with ordinary anilin dyes. Motility: slight, flagella present. Cultures, facultative anaerobe; gas is produced; grows in ordinary mediums; liquefies gelatin; forms acid in litmus milk and Hiss serum water. Sugars: The simple sugars are markedly fermented, the disaccharids to less degree, the polysaccharids slightly or not at all. Pathogenicity: low for guinea-pigs, rabbits, mice, rats and for man. Does not produce necrosis or gangrene of tissues.

BACTERIOLOGIC FINDINGS

Reference to Tables 8 and 9, showing sputum examinations in seventy-seven fatal instances of influenzal pneumonia and 163 instances in which recovery occurred brings out the interesting fact that hemolytic streptococci were not reported in the sputum of any of these patients, while cultures made at necropsy revealed this organism as the preponderating type of infection in a great many instances.

The result of seventeen blood cultures, made during the week of October 11-18, from patients with influenzal pneumonia or some complication, is given in Table 13.

A series of nasopharyngeal cultures on influenza patients was made by the laboratory staff at Camp Funston during the height of the epidemic, from September 25 to October 19. Human blood-agar plates were used. The results are given in Table 14.

SUMMARY OF EVIDENCE OF INVASIVE FEATURES BY B. INFLUENZAE

B. influenzae was the predominating organism obtained in 35.7 per cent of 300 nasopharyngeal cultures from influenza patients. Among 928 sputum cultures from influenzal pneumonia patients, the majority of whom recovered, influenza bacilli were found in 18.7 per cent. Among seventy-seven instances of fatal influenzal pneumonia, the sputum cultures revealed influenza bacilli in only 5.2 per cent.

This evidence strengthens the belief that the influenza bacillus, or some unknown virus, merely served to predispose to pulmonary infection with organisms commonly known to produce pneumonia, such as the pneumococcus and *Streptococcus hemolyticus*.

TYPES OF INFECTION RESPONSIBLE LOCALLY FOR INFLUENZAL PNEUMONIA

It is well known that in any epidemic of acute respiratory disease the organisms responsible for the development of pneumonia are usually those that have been demonstrated to prevail commonly in the particular locality. For about one year prior to the onset of this epidemic of influenzal pneumonia, the hemolytic streptococcus (with the exception of two months, July and August) had been the preponderating type of infection in the U. S. Military Reservation, Fort Riley. It had been responsible for many fatal pneumonias, for the serious complications in pneumonia (68.4 per cent. of 155 operative empyemas[2]), for many mastoid infections, and for many acute surgical conditions. We were not surprised, consequently, at its prevalence as the associated type of infection in the pneumonias that followed influenza. If one ascribes to the hemolytic streptococcus the rôle of secondary invader it does not in any way lessen its importance. In seventy-seven fatal instances of influenzal pneumonia and 163 cases with recovery, this organism was not found in the sputum cultures. It was found in only 1.7 per cent. of 300 nasopharyngeal cultures from influenza patients, and yet, in fifty-five

2. Stone, W. J.; Phillips, B. G., and Bliss, W. P.: A Clinical Study of Pneumonia Based on Eight Hundred and Seventy-One Cases, Arch. Int. Med. **22**: 409 (Oct.) 1918.

pneumonia necropsies this organism was obtained in 41.1 per cent. of tissue cultures. It was, in addition, obtained from 41.5 per cent of the pleural fluids of sixty-five patients with empyema who came to operation as a result of the epidemic.

It is well known that the tonsil crypts harbor the hemolytic streptococcus in from 75 to 85 per cent. of those examined by various workers. Mouth carriers of this organism are relatively common. This organism has also been frequently isolated from many other tissues not always associated with disease processes. The fact that the nasopharyngeal cultures were so largely negative for this organism in this series does not mean, of course, that the infection did not exist in the tonsils. It seems fair to assume that its presence in the tissues of the body may not be, in the vast majority of instances, incompatible with health; but it is evident, in view of the necropsy findings here recorded, that whatever organism or virus may be responsible for the acute respiratory invasion, the hemolytic streptococcus, whether introduced from within or from without, became the most serious factor in the production of high mortality.

CLINICAL FEATURES

Bleeding from the nose and lungs was relatively common. Cyanosis was marked comparatively early in the course of the disease and was not, in the majority of patients, associated with air hunger. It was not relieved by venesection. The heart rate was not markedly increased in many instances until shortly before death. A rate of from 100 to 104 was not uncommon. Prostration out of all proportion to the apparent extent of pulmonary involvement was marked. In the majority of patients a remission in the fever occurred about the third day and proved a deceptive feature. Many patients manifested a recrudescence of lung symptoms with increased fever on the day following and, with increasing stupor or delirium, died in from sixty to seventy-two hours. Leukopenia was almost a constant feature. Leukocyte counts of 2,000 per cubic millimeter were not uncommon.

Delirium was a prominent symptom in many patients with pneumonia. This was temporarily relieved by lumbar drainage of from 50 to 70 c.c. of spinal fluid. The congestion of the cerebral vessels with edema, distention of the lateral ventricles and subacute basilar meningitis were the pathologic conditions found at necropsy. These conditions were responsible for the delirium, meningismus, choking of optic disks and increased spinal fluid pressure. In markedly delirious patients the ophthalmoscope revealed a characteristic and more or less constant picture. The fundus vessels were engorged and tortuous, the disks congested, the cup and vessel sheaths edematous. From the necropsy findings (distention of nerve sheaths by edema) one would expect this ophthalmoscopic picture. In no case of known sphenoid involvement, without delirium, were changes found in the ocular fundi. In one case of acute ethmoid sinusitis, a papilledema was noted. This was relieved on drainage of the ethmoids by shrinking the nasal mucous membrane.

TABLE 12.—SUMMARY OF NECROPSY CULTURES POSITIVE FOR STREPTOCOCCUS HEMOLYTICUS

	Per Cent.
Lungs	41.0
Pleural fluids	61.9
Spleens	45.4
Heart's blood	56.5
Spinal fluids	33.3
Sphenoid sinuses	46.4
Ethmoid sinuses	25.0
Ears and mastoids	35.3
Tissue cultures	25.0
Average per cent. positive	41.1

The relationship of sinusitis involving the sphenoids and ethmoids to basilar meningitis could not be determined. From the clinical standpoint more attention should be paid to the involvement of these tissues in any acute respiratory infection, since drainage by shrinking the nasal mucous membrane, by means of an aqueous spray of 4 per cent. antipyrin, relieved these conditions.

TABLE 13.—RESULTS OF BLOOD CULTURES IN INFLUENZAL PNEUMONIA

	No.	Per Cent.
Pneumococcus (type undetermined)	3	17.6
Streptococcus hemolyticus	3	17.6
Sterile	11	64.8

TABLE 14.—RESULTS OF THREE HUNDRED THROAT CULTURES IN INFLUENZA

	Per Cent.
B. influenzae (predominating)	35.7
Pneumococcus (predominating); type undetermined	27.0
M. catarrhalis (predominating)	23.0
Streptococcus hemolyticus (predominating)	1.7
Nonhemolytic streptococcus (predominating)	2.0
Miscellaneous organisms	10.4

Mastoiditis as a complication of influenzal pneumonia was found in seventeen necropsies (41.4 per cent.). Clinically, otitis media, with tenderness over the mastoid area, was a complication in a great many cases. The first symptoms were dull aching pain and slightly diminished hearing in the affected ear. Examination disclosed a bleb on the tympanum or a bulging drum. Hemorrhage from the external canal, which was not uncommon, signified rupture of the bleb on the tympanum. Such cases were not followed by otitis media, and the pain was relieved. Patients who presented a bulging drum as evidence of otitis media required paracentesis. The findings at necropsy and the roentgenograms of many patients demonstrated that the mastoid cells were involved with the middle ear in all cases. *Streptococcus hemolyticus* was the predominating organism in the cultures from the mastoid as well as the blood stream. Bone necrosis was conspicuous by its absence in the mastoids examined at necropsy. Six patients with otitis media-mastoiditis came to operation. In these six cases the organism found in cultures taken from the cells at the time of operation was *Staphylococcus albus*. This undoubtedly was due to infection from the external auditory canal. The absence of bone necrosis was due to the sudden onset, the prompt drainage of the middle ear, either spontaneously or by paracentesis, and the fact that the patients were in good physical condition at the time of infection. Had the sequence been such as occurs in measles, streptococcus tonsillitis or scarlet fever (an otitis media with gradual involvement of the mastoid cells), extensive bone necrosis would have been the result. The time factor appeared to be of great importance in determining the presence or absence of bone necrosis.

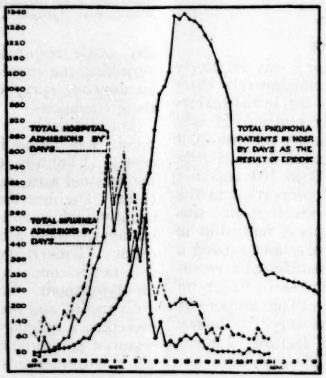
The absence of bone necrosis and the presence of blood stream invasion by *Streptococcus hemolyticus* in this series sheds light on the extensive epidemic of mastoiditis seen at this hospital last winter and spring. The mastoiditis that occurred at that time (164 cases)

presented a more serious type of infection. Likewise, *Streptococcus hemolyticus* was the organism isolated in the majority of cases. The otitis media occurred with a delayed time interval subsequent to streptococcus tonsillitis, measles or scarlet fever. This type of otitis media was rapidly followed by mastoiditis of the fulminating variety. Operation within forty-eight hours in many instances revealed extensive necrosis of bone. Frequent complications (compared to civil practice) were meningitis and septic arthritis. Exposure of the lateral sinuses and the dura did not account for the invasion of the meninges or blood stream, because in cases in which these structures were not uncovered, the complications developed quite as frequently.

We have gained the impression that there may be a very definite connection between meningitis and the trauma of the mastoid operation, if done with a chisel. The meningeal involvement followed too rapidly to be due to direct extension from the mastoid, and the necropsies showed no connection. The majority of instances of meningitis occurring in pneumonia with an associated otitis media are the result of blood stream invasion. Those instances that occur following a mastoid operation in pneumonia may be precipitated by the trauma; but blood stream invasion is probably the important factor.

Three deaths occurred from influenzal pneumonia developing during the course of meningococcus meningitis, and three deaths resulted from pneumococcus meningitis in patients with pneumonia (without otitis media).

Alkaline drinks were useful in treatment of herpes labialis. Tincture of digitalis, standardized by the cat method of Hatcher and Eggleston, was used according to the body weight of the patient as a routine measure. Edema of the lungs, with the expectoration of large quantities of blood-tinged foam, was a conspicuous incident in many fatal cases. The presence of severe pleural pain with expiratory grunt was always suggestive of effusion twenty-four hours later.


TOTAL HOSPITAL ADMISSIONS BY DAYS
TOTAL INFLUENZA ADMISSIONS BY DAYS
TOTAL PNEUMONIA PATIENTS IN HOSP BY DAYS AS THE RESULT OF EPIDEMIC

Total hospital admissions, influenza admissions and pneumonia patients at Fort Riley, Sept. 15 to Nov. 1, 1918.

In about thirty instances, subcutaneous emphysema was noticed. It was not always fatal, but occurred frequently among patients who died. The emphysema was usually first noticed at the suprasternal notch, and spread rapidly over the chest, neck, scalp and abdomen to the thighs. Its development did not seem to be associated with severe paroxysms of coughing. Empyema occurred in less than 10 per cent. of the pneumonias. This was in marked contrast to our experiences earlier in the year, in which empyema occurred in 200 of 871 completed cases of pneumonia (22.9 per cent.).

SUMMARY

1. Among a military population of 63,374, an acute respiratory disease called influenza appeared in epidemic form affecting 15,170 individuals (23.9 per cent.).

2. The incidence of pneumonia among influenza patients was 17.2 per cent.

3. Among 2,624 pneumonia patients, 941 deaths occurred in forty days, a mortality of 35.8 per cent.

4. The final clinical diagnoses among 941 fatal instances were: lobar pneumonia, 76.2 per cent.; bronchopneumonia, 23.8 per cent. At necropsy, in fifty-five instances, the diagnosis of combined lobar pneumonia and bronchopneumonia (massive pneumonia) was made in 72.6 per cent., bronchopneumonia in 27.2 per cent.

5. Among 300 nasopharyngeal cultures from influenza patients on human blood agar, *B. influenzae* was the predominating type of infection in 35.7 per cent. In the sputum cultures from 928 pneumonia patients, *B. influenzae* occurred singly or in combination in 18.7 per cent. Among seventy-seven fatal instances of pneumonia, *B. influenzae* was found in the sputum cultures in 5.2 per cent.

6. At necropsy, in fifty-five instances of pneumonia, cultures from the lungs, pleural fluids, heart's blood, sinuses, mastoids and tissues revealed the pneumococcus in 56.1 per cent., and *Streptococcus hemolyticus* in 41.1 per cent. The hemolytic streptococcus was, in addition, isolated in 41.5 per cent. of sixty-five empyemas resulting from the epidemic. This was to be expected since the hemolytic streptococcus had been the predominating type of associated infection in pneumonia throughout the preceding year in this locality.

7. No deaths occurred in this epidemic except from pneumonia or its complications. Although the hemolytic streptococcus was responsible for death in the majority of instances, interstitial pneumonia was not a prominent feature. When death occurred early in streptococcus pneumonia (three or four days), the pathologic picture was that of the interstitial variety. This was particularly true of the pneumonia following measles, as judged by earlier experience with this type of infection. When death occurred at a later period, as in this epidemic, it appeared that through the confluence of many areas of peribronchial pneumonia, contiguous lobules and eventually entire lobes or a whole lung had become involved in a massive type of pneumonia.

8. Systemic invasion of many organs and tissues by the infections responsible for the pneumonic process (the pneumococcus and streptococcus) was evident at necropsy. This refers particularly to the brain and meninges, the middle ear, mastoid and sinuses.

9. In forty-one necropsies, meningitis of subacute basilar type associated with edema was a striking feature in 58.5 per cent., while brain edema without meningitis was present in 21.9 per cent. Otitis media and mastoiditis existed in 41.5 per cent., while sphenoiditis was present in 68.3 per cent. and ethmoiditis in 31.7 per cent.

10. Bone necrosis of the mastoid was conspicuously absent in influenzal otitis media and mastoiditis. This

was in marked contrast to otitis media following measles, streptococcus tonsillitis or scarlet fever in which, because of the length of the preceding illness and the condition of the patients, the development of middle ear infection was delayed; but when it occurred mastioditis was rapidly followed by bone necrosis.

CONCLUSIONS

1. *B. influenzae* had not been frequently encountered in the sputum or throat cultures of patients in this locality during the year preceding the outbreak of this epidemic.

2. From the facts given it appears that *B. influenzae* or an unknown associated virus was responsible for the invasive features of this epidemic of acute respiratory disease, but that, as the cause of death in the subsequent pneumonias and their complications, the pneumococcus and the hemolytic streptococcus, which was associated with it and which was an organism prevalent in this locality, were largely responsible.

3. From experience based on the study of 1,100 patients with pneumonia treated in the medical service of this hospital during the year preceding this epidemic, it is believed that pneumococcus pneumonia, when the hemolytic streptococcus is not prevalent or associated with it, is a disease with relatively low mortality. During an interval of two months (July and August, 1918) preceding this epidemic, in a series of 151 instances of pneumococcus pneumonia the mortality was 9.9 per cent. During these months the hemolytic streptococcus was rarely encountered (1.8 per cent. of 162 sputum cultures), and but one empyema occurred, the causative organism being the pneumococcus.

4. Generalized systemic invasion by the combined infections producing pneumonia occurred in many instances in this epidemic. On the time of such systemic invasion in a pneumonia patient depends, to a large degree, the time of death and the extent of the pathologic processes seen at necropsy. Blood stream invasion with involvement of many organs due to breakdown of defensive barriers may occur only a short time before death. This explains the large percentage of negative blood cultures in pneumonia, unless taken shortly before death.

5. As a source of information concerning the type of infection present in acute respiratory disease suspected to be due to the hemolytic streptococcus, because of its prevalence in any locality, cultures from tonsil surfaces and crypts on blood-agar plates are recommended.

6. Otitis media occurring during the course of influenzal pneumonia, especially if due to the hemolytic streptococcus, has, in this series, always been accompanied by mastoiditis. Drainage of the middle ear should be promptly secured. Failure to establish drainage may result in bone necrosis of the mastoid, which alone is indicative of imperative operation. Bone necrosis can be detected by roentgenograms so taken as to compare the sound with the affected side on the same plate. At time of operation, as little trauma as possible is essential. The use of the electric bone drill in removing the outer table decreases the trauma.

7. A dull occipital headache in influenza or pneumonia is suggestive of sphenoid sinusitis. Shrinking of the nasal mucous membrane by means of a spray of a 4 per cent. aqueous antipyrin solution affords relief.

8. Lumbar drainage in delirious pneumonia patients is not only a source of diagnostic information but also is a therapeutic measure of value. This should be repeated as frequently as appears necessary to relieve the pressure of fluid.

9. Tincture of digitalis, standardized to definite dosage and administered to full estimated requirement during the first twenty-four to thirty hours in pneumonia, has lessened the deaths that might be attributed to circulatory failure.

10. The most common complications in this epidemic of influenzal pneumonia were pleural effusions, empyema, pericarditis (serofibrinous or purulent), cerebral edema and meningitis, otitis media and mastoiditis, sphenoid and ethmoid sinusitis and nephritis.

11. Specific pneumococcus antiserums supplementing Cole's Type I serum are much to be desired, but more attention should be directed to the rôle played by the hemolytic streptococcus in the production of the epidemic types of pneumonia.

12. It is believed that not much may be expected in the specific treatment of pneumonia of the type associated with the presence of the hemolytic streptococcus until a potent antiserum for the various strains of this organism has been produced. Many serums designated as polyvalent are on the market, but opinion is by no means unanimous as to their value in the treatment of pneumonia.

Clinical Notes, Suggestions, and New Instruments

A GOOD TENSION SUTURE

REMBERT H. THIGPEN, M.D., JEROME, ARIZ.

In this suture are employed one or more strands of silkworm gut; two small gauze sponges; two metal buttons, each the size of a 25-cent piece, and perforated at its center with a one-sixteenth inch hole, and two or more perforated shot. The sponge, button and shot holding each end of the intestine

Complete tension suture.

are placed a suitable distance from the line of incision, and tightened to secure the desired approximation. There occurs a pronounced ridge along the line of incision. The ends of the absorbable subcuticular suture closing the skin are treated as are the tension sutures.

Cost of Preventable Sickness.—A recent survey of five townships in Duchess County, made by the State Charities Aid Association, disclosed the fact that preventable sickness was costing the county at a conservative estimate $412,000 a year in actual money, to say nothing of continued invalidism, bereavement and loss of productive power to the community which could not be estimated. A close study was made of 1,600 cases of serious illness and it was estimated that the county was losing 9,000 working days by men and women, and 13,700 school days, and that these two items alone were costing the community $25,000 a year.—Report of Duchess County (N. Y.) Health Association.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, FEBRUARY 15, 1919

SCIENCE AND WAR BREAD

It has required the exigencies of a world war to accord science a more respectful hearing in the councils of everyday life and industry. In the past the scientist has been tolerated as a sort of visionary, incapable of securing so-called practical results, if he has not actually been snubbed by the cut-and-dry type of American. The past four years have shown conclusively, however, that the heralded genius for invention cannot be depended on to lead the way out of patent difficulties in times of great stress. Hence the refuge in the man of science as a last resort.

The food conservation movement brought our nation face to face with the necessity of using substitutes for wheat, the mainstay in our "daily bread." There can be no question as to the comparative wholesomeness of other cereals like corn, rice and barley—a conclusion for which we are indebted in turn to scientific investigation as well as to experience. But wheat has been the cereal *par excellence* in the preparation of that special dietary article, bread, which the entire world seems to crave. What special qualities render wheat so superior in baking the loaf? What are the unique characteristics that have put it into the foreground so prominently as to give it an established place in the world's common rations? Of course it has long been taught that the advantage is essentially due to the mixture of unusual wheat proteins which are insoluble in water and are commonly designated as gluten. The swollen, coherent gluten imparts to wheat-flour dough those properties of tenacity and elasticity that are peculiar to it. It permits the stretching and distending of the mass in bread making so that as the result of the action of yeast in fermenting the carbohydrates present the volume may increase four or five fold.

Innumerable difficulties in bread making are so frequently referred to that many have almost despaired of securing any trustworthy solution. The industry has at length become organized to a point at which science has been called on to lend a helping hand[1] in order to enable the practical art to keep pace with the progress of biochemistry. The extent to which the dough can be distended varies with the quantity and the physical quality of the gluten, as has long been demonstrated. But we are now shown how the baker can, within certain limits, improve the rising of the dough by modifying the physical condition of the gluten. The latter is profoundly influenced in its properties, as many proteins are now recognized to be, through the presence of acids or certain salts. According to Cohn and Henderson,[1] who have investigated these factors for the Division of Food and Nutrition in the medical department of the U. S. Army, the acidity of the dough at the time of baking seems to be the most important variable factor in bread making. Accordingly, simple procedures have been devised for measuring and correcting this factor.[2] The hydrogen-ion concentration of bread is related to the original acidity and to the acid-combining power of the cereals used, to the amount of yeast, and in that the activity of yeast varies with the acidity of the medium and modifies it through the acid products of its own metabolism, to the conditions of fermentation. The importance of accurate information about acidity is herewith made clear. Nothing could be simpler than the method proposed: a few drops of a solution of methyl red allowed to fall on a slice of bread, and a color chart for comparison, comprise the outfit.

These features scientifically attained, let it be reiterated, have already enabled bakers to overcome not only difficulties in the technology of bread making but also certain annoying pathologic manifestations. Ropy bread is produced by the action of certain microorganisms, notably members of the *Bacillus mesentericus* group, of which the spores survive the heat of the oven and later attack the center of the loaf. This has been a factor of serious economic importance, greatly exaggerated by war-time conditions. It has now been demonstrated by Cohn, Wolbach and Henderson[3] at Harvard University that the organism responsible for rope cannot develop in bread when the acidity is of suitable character—an item that can now be gaged with mathematical accuracy. Measured additions of lactic acid to the dough constitute a prophylactic agency. This is a matter of no little moment at a time when there are large variations in the acidity of bread resulting from the changing formulas and different substances that bakers of late have been forced to use.

But there remains the deficit of gluten, despite all physicochemical adjustments of its properties, when other cereals must take the place of wheat. Skilful fermentation and control of acidity cannot make up for lack of gluten in wheat substitutes. However, the

1. For a discussion of the subject, from which many of these statements are borrowed, see Cohn, E. J., and Henderson, L. J.: The Physical Chemistry of Bread Making, Science, Nov. 22, 1918, p. 501.

2. Cohn, E. J.; Cathcart, P. H., and Henderson, L. J.: The Measurement of the Acidity of Bread, J. Biol. Chem. **36**: 581, 1918.

3. Cohn, E. J.; Wolbach, S. B., and Henderson, L. J.: The Control of Rope, J. General Physiol. **1**, No. 2, 1918.

Harvard investigators have demonstrated that a small addition of serum protein to doughs containing wheat substitutes functions much like the gluten and materially lessens the difficulties that have existed in the production of "victory" products. Bread prepared with blood is not an entire novelty. It may be psychologically unattractive or even objectionable to those who are vegetarians by faith; but to quote the scientific verdict, "if it is inferior to bread made of pure wheat flour, it possesses certain important qualities of its own, and its use seems to be in all respects quite unexceptionable."

THE SCIENTIFIC ASSEMBLY OF THE AMERICAN MEDICAL ASSOCIATION

The criticism has been made that the annual sessions of the Scientific Assembly of the American Medical Association are entirely too strenuous; too many section meetings go on at the same time, and practically every minute is occupied by scientific work, even the evenings often being given over to scientific work rather than social functions. The number of papers on the programs of all the sections have run as high as 350 or 400. There is no other scientific or medical convention, state, national or international, at which so many papers are read or so much scientific material is considered. In this country there is only one other convention that is similar in character—the Congress of Physicians and Surgeons of North America—which has met every three years at Washington. This is composed of some ten or twelve special societies which might be compared with the sections of our Scientific Assembly. These special societies meet only in the morning, as there is a general meeting in the afternoon which the members of the special societies are supposed to attend. Actually the afternoon and evening sessions are more social than scientific. The British Medical Association is more comparable with our association. Those who have attended the annual sessions of the British Medical Association have quickly noticed a difference—its scientific work is confined to the morning hours, while the afternoons and evenings are given over to social matters, garden parties, conversazioni, tea, cricket and what not. Our British confrères seem to devote a large portion of the time at their annual meetings to having a good time and to forming new and renewing old acquaintances.

While the British Medical Association's scientific program provides for many sections, most of them hold but one or two meetings during an annual session and usually have a very short program, frequently only two or three papers. With an increasing number of sections, our annual sessions have become more and more strenuous; for those who are attached to any particular section, attendance on these meetings becomes a drudgery—hard work without relaxation. There should be a happy medium. Primarily the sections of the Scientific Assembly are for the dissemination of scientific knowledge among the Fellows; almost, if not quite, as important an object of these annual meetings should be the social aspect, the getting acquainted with other physicians, not only with those interested in a similar kind of work, but also with physicians and medical interests in other fields.

Our Scientific Assembly is a combination of fifteen, sometimes sixteen, sections. In the past, these sections have all met at the same time, both morning and afternoon, during the three days devoted to section work; and this, notwithstanding the fact that a large majority of the Fellows who attend these annual sessions are not especially interested in the work of any one section. Most of them are attracted by the programs of several or all of the sections. Many Fellows are confused by the multiplicity of good things placed at their disposal. Frequently they become bewildered by this complexity of the program and fail to take advantage of any of the scientific work.

These faulty conditions have been recognized for some time. They constituted the first problem taken up by the Council on Scientific Assembly. In 1917, the Council proposed a plan for abating the evil. This provided for three meetings for a majority of the sections, but allowed certain others to hold five or six. The plan was adopted, but later in the session a protest was made, presumably because the scheme favored certain sections to the disparagement of others, and the House of Delegates reconsidered its action. Last year, the House directed the Council on Scientific Assembly to study this problem and to formulate a definite plan of procedure for future meetings. In compliance with these instructions a tentative program was worked out by the Council and was presented to a meeting of the secretaries of the sections held in Chicago, February 6. This scheme was the same as that adopted in 1917, except that all sections were treated alike. The secretaries discussed the subject thoroughly and were enthusiastic in favoring its adoption. It was agreed, further, that the proposal should be put into effect this year at Atlantic City.

Each section at the coming Scientific Assembly will be limited to one meeting each day, half to hold morning sessions and the other half afternoon sessions. Special attention was given to the grouping, so that sections devoted to allied subjects will alternate. For example, the ophthalmologist may attend his own section in the morning and that on laryngology in the afternoon; the internist may attend the Section on Practice of Medicine one half day, and the other half day the Section on Surgery, Pathology or Pharmacology. Loyalty to a particular section has been and is an important factor in developing the Scientific Assembly of the Association. However, the new arrangement will encourage rather than discourage full attendance on the sections in which a Fellow may be

particularly interested. He will now be able to attend other sections without his conscience being disturbed by feeling that he is neglecting that section to which he should give his entire allegiance.

The new arrangement simplifies the programs, equalizes attendance on the sections, broadens the scope of the discussions, and, finally, affords opportunity for social gatherings.

A NEW RECORD FOR ALTITUDE

One of the scientific by-products of the war has been a greatly enhanced understanding of the physiology of altitude. Only a few years have elapsed since the establishment of an international physiologic laboratory on Monte Rosa in the Alps, an undertaking sponsored by the late physiologist Angelo Mosso of Turin to promote the investigation of the numerous obscure questions relating to human welfare and functioning at considerable heights. By studies made there and elsewhere, mountain sickness has been shown at length to be due fundamentally not to the merely mechanical effects of decreased air pressure in the ears and on the blood vessels, but rather to oxygen deficiency attributable to the low partial pressure of this gas at considerable altitudes.

The institution of aviation as a practical performance has raised novel problems in relation to travel at high altitudes. To the fundamental question of the effect of the barometric pressure per se has been added the complicating circumstance that the aviator does not ascend or descend slowly and secure any benefits of gradual adjustment to new conditions or any real acclimatization. On the contrary, he is subjected to sudden physiologic strains of considerable severity. These features were reviewed in a series of papers in The Journal under the title "Medical Studies in Aviation."[1] The investigations of the Medical Research Laboratory of the Air Service at Mineola, L. I., have demonstrated the possibility of studying many of the factors of aviation as it concerns the aviator by exposing the individual to partial pressures of oxygen comparable with those likely to be encountered in air travel. Thus a person confined in a closed chamber from which the air is partially exhausted will experience phenomena of malaise with which observers of symptoms at high altitudes have made us familiar. Mere withdrawal of the oxygen alone, such as occurs by rebreathing air in a confined space, whereby this gas is gradually used up, likewise suffices to induce the symptoms. In either case they can be relieved by administration of oxygen; and the altitude effects can be averted if oxygen is respired in due season as a precautionary measure.

In studies of this sort by the physiologic experts of our air service, the possibility of enduring barometric pressures comparable to an altitude of 35,000 feet has been convincingly demonstrated, the proper supply of oxygen having been maintained during the diminishing air pressure. It is of no small interest, nevertheless, to learn that the demonstrations thus provided in tests on the ground have been verified under the actual conditions of flight in the air itself. Within the past few weeks Captain Lang, the Australian aviator, accompanied by Lieutenant Blowes, in a flight from England has recorded the achievement of the world's record for altitude by reaching the height of 30,500 feet, or nearly six miles, in a biplane. To accomplish this it was necessary to ascend into air thinner than that which is pierced by Mount Everest.

How important the oxygen factor is in such performances is certified by the collapse and unconsciousness of Blowes at an altitude of 20,000 feet, owing to a defect in the tube supplying him with oxygen. At the maximum altitude reached, a temperature of 38 F. below zero was recorded, that is, 70 degrees below the freezing point of water. The aviators suffered severely from the cold despite the devices adopted to keep them warm. It is not improbable that this feature of life at very high altitudes will offer a greater practical difficulty than the more readily remediable diminution in the partial pressure of oxygen. In the case of mountain climbers the problems of relieving oxygen shortage and suffering from cold are augmented by the extreme muscular exertion required under most unfavorable conditions for exercise. Whether the "highest spires" of the world can ever be climbed cannot be decisively answered from physiologic considerations alone; but with Mount Everest attaining a maximum of only 29,000 feet, we may safely admit the contention of a recent commentator, who stated that "the new lord of height is the airman."

CALCIUM AND INFANTILE TETANY

As The Journal recently pointed out,[1] Noël Paton and his collaborators of Glasgow University have come to the conclusion that the tetany of animals deprived of their parathyroid glands and the idiopathic tetany of man are identical as regards their characters and metabolism. The implication is that an error in the chemical exchanges of the organism results in an intoxication by guanidin derivatives, a disturbance in parathyroid function being assumed to underlie the abnormal conditions. So far, however, as infantile tetany is concerned, Howland and Marriott[2] of the Department of Pediatrics at the Johns Hopkins University insist that enough studies have been made to show that parathyroid lesions in infancy are the

1 Medical Studies in Aviation, J. A. M. A. 71: 1382 (Oct. 26) 1918.

1. The Parathyroids and Idiopathic Tetany, editorial, J. A. M. A. 71: 1661 (Nov. 16) 1918.

2. Howland, John, and Marriott, W. McK.: Observations on the Calcium Content of the Blood in Infantile Tetany and on the Effect of Treatment with Calcium, Bull. Johns Hopkins Hosp. 29: 235, 1918.

exception and not the rule. Furthermore, they maintain that parathyroid lesions as severe as have been found after tetany may occur in patients who, during life, have shown absolutely no evidences of this symptom.

In searching for other possibilities of etiologic significance, so far as the tetany of children is concerned, the Baltimore pediatricians have turned their attention to the blood. By a striking series of analytic determinations they have furnished seemingly incontrovertible evidence of a diminution of the calcium in the serum in cases of active tetany. The quantity of this element in the serum of normal infants as well as in placental serum is singularly constant—above 10 mg. and rarely more than 11 mg. per hundred c.c. of serum.

In eighteen cases of idiopathic tetany, on the other hand, it averaged 5.6 mg., being greatly reduced in all cases. Furthermore, it was found that this constancy in the diminution of calcium in the serum—a reduction of 40 per cent. in many instances—affords some means of differentiating tetany from other convulsive disorders in infancy. In rickets, often but not always associated with infantile tetany, there may be a slight reduction in the calcium, but this does not seem to be obligative.

Calcium and magnesium are known to be physiologically antagonistic to each other in some instances. Analyses of the magnesium content of infantile blood justify Howland and Marriott in saying that this element plays no determining rôle in the production of the symptoms of tetany. The logical sequence of the discovery of a lowered calcium content in the blood was to attempt to increase the amount of this alkali earth element. Administration of calcium chlorid with the food has proved efficacious, thus substantiating the hopes of the investigators. They assert that severe or dangerous symptoms must sometimes be held in check by sedatives until calcium in full doses produces its effect. Thereafter only calcium need be given.

These practical contributions to the diagnosis and therapy are of themselves commendable and helpful. Scientific curiosity cannot stop here, however. It seeks the ultimate causes of disease. Howland and Marriott's conception of tetany is that some factor, at present unknown, causes a reduction of the calcium content of the blood. When this drops to an amount roughly between 6 and 7 mg. of calcium per hundred c.c. of serum, frank evidences of tetany arise. This amount, however, is not the same with all individuals. With some it may be as low as 5.5 or 6, with others as high as 7.5. These symptoms occur in outbursts so long as the calcium remains low. When the calcium rises, the symptoms disappear. The height to which the calcium must rise in order that the symptoms must disappear is also somewhat variable.

It remains to be seen whether the belief that many of the symptoms of infantile tetany are directly referable to the diminished calcium content of the blood, and that they may be prevented or caused to disappear by calcium therapy, is irreconcilable with other current hypotheses. The "alkalosis" factor noted by some experimenters and emphasized in recent studies of gastric tetany[3] cannot be put aside, though Howland and Marriott found no evidence for it in the serum of infants with tetany. They admit that the symptoms of tetany and the lowering of the calcium content of the blood serum may be produced in a variety of ways. What is the still unknown factor that apparently may effect the same symptom through seemingly unrelated channels? Parathyroid deficiency, alkalosis, lowered calcium in the circulation—these are possible incidents in some profound phenomenon that remains to be discovered.

Current Comment

OHIO FINDS A BETTER WAY

It has long been customary for physicians to oppose bills licensing followers of cults and sects. This attitude was taken originally in the hope of upholding the standards of medical practice, for the public good. In spite of opposition, however, sooner or later the various sects have secured the legislation thus desired. As a result of this attitude of physicians, the public has concluded that the opposition to the passage of sectarian laws is to prevent competition, in spite of the facts that the laws have never restrained the sectarian and that his competition has never been injurious to the physician. Much more serious has been the public belief that such bills were of interest only to physicians, and that so far as they affected the public health the medical profession would protect the interests of the people. The public has never felt any responsibility in the matter, while the medical profession has incurred unjustifiable criticism in its efforts to protect the public. Evidently physicians are beginning to see things in a clearer light. In the Ohio state legislature a bill has been introduced exempting Christian science practitioners from the educational requirements of the state law. When the bill came before the Public Health Committee of the legislature, the usual argument between the Christian scientists and the doctors was expected. Greatly to the surprise of the legislators, however, the chairman of the committee of the Ohio State Medical Association announced that the association would take no position in regard to this bill. He pointed out that the proposed measure would not in any way affect physicians but that it was a menace to the public health, in permitting unqualified and untrained persons to treat the sick. As this is a matter which concerns the health of the people of the state rather than the welfare of physicians, it is only right that it should

3. Tetany and Alkalosis, editorial, J. A. M. A. 72: 350 (Feb. 1) 1919.

be settled by the people themselves. The result of this unexpected statement was that the laymen on the legislative committee who had sat by indifferently, expecting that the rights of the public, so far as they were endangered by the measure, would as usual be protected by the physicians, suddenly began to sit up and take notice when they found the responsibility for protecting the health of their constituency placed squarely on their own shoulders. The bill is still before the legislature. The medical profession has performed its full duty in pointing out the danger to public health which would be involved in its passage. Whatever action is taken by the legislature will be with full knowledge of the consequences. This is the ideal attitude for physicians to take, as should have been recognized long ago. The responsibility of protecting the public from disease and of securing better health conditions belongs to the people. It is not the function of the medical profession to maintain lobbies or to endeavor to secure public health measures by political methods. The true function of the medical profession is to advise the people, to show them how to protect themselves. The doctor's mission is to be a teacher and not a political manipulator. The responsibility for public health conditions must rest with the people and not with any special class or profession. The sooner these general principles are recognized, the better it will be for the medical profession and for public health advancement.

THE DANGER IN ASIA

Asia is the home of plague and many other pests. At first thought this does not concern us. But the presence of plague in epidemic form, especially in the ports of the Orient, does constitute a menace to Americans. The facilities for travel have brought Asia and our Pacific coast together, while the possession of the Philippines has multiplied the occasions for intercourse with the inhabitants of the Far East. Thus the diseases of Asia threaten to some degree the lives and health of the American population, and the situation regarded from this point of view has been aggravated by the conditions of war. Therefore it may be truly affirmed that the persistence of plague in India and China is a source of danger to this country and one that must be guarded against. All these points have been emphasized previously, but owing to existing circumstances taken in connection with the unvarying persistence of plague in Asia, it seems timely to lay further stress on them. An exchange[1] points out that the present epidemic of plague in Asia began in Hong Kong in 1894 and in Bombay in 1896, and has persisted since then. It was as deadly and widespread as ever during the first three months of 1918, that is, twenty-two years after the original outbreak. Moreover, so long as the rat is infected in a locality, just so long will man be liable to the disease. The obstacles in the way of successfully grappling with the plague problem in Asia are numerous and almost insurmountable. The natives object to wholesale inoculation and rat destruction; hence the only effective mode of procedure is most difficult to carry out. Religious scruples against the slaughter of animals, even vermin, are prevalent throughout India. Consequently it may be taken for granted that plague will continue to persist in Asia; and as it is extremely rife in the two great ports of that continent, Hong Kong and Bombay, it is not an impossibility that it will be conveyed thence to American ports on the Pacific coast, if necessary precautions are not taken. While there is no doubt that our health authorities are awake to the danger, at the same time it is well to know that the danger exists and will exist as long as plague persists in Asia.

1. Plague and Its Persistency, editorial, J. Trop. Med. and Hyg., **21**: 242 (Dec. 16) 1918.

SCIENTIFIC PAN-AMERICANISM

In commenting on the Spanish Edition of The Journal,[1] we stated that nowhere could the friendship and close relationship between the republics of the Western Hemisphere be more fruitful than in the field of science, and especially of medical science. An evidence of the fact that our sentiments are reciprocated and that we were voicing ideas that were generally held throughout Pan-America is contained in the letters received from our colleagues in all the Latin American countries in reference to our Spanish-American Edition. The same ideas have inspired editorials appearing in recent issues of the Cronica Médico-Quirúrgica of Havana.[2] These strongly emphasize the point brought out in The Journal and so well expressed in one of these editorials. To quote: "The ties uniting the peoples of America are growing constantly stronger. It is the logical effect of the international political situation which aids in making more effectual this union between the young peoples who are gazing absorbed at the tremendous drama which is being played before our eyes on the other side of the Atlantic. We, like many of our colleagues, insist that it is necessary for us to know each other better, to increase the relations of friendship and confraternity between the sister republics." The Journal may add that it will be only too glad to participate in any movement which has for its object the bringing together, both scientifically and socially, of the physicians of the Western Hemisphere, and to do everything in its power to transfer the project from the realm of expectation to that of accomplishment.

1. A Spanish Edition of The Journal of the American Medical Association, editorial, J. A. M. A. **71**: 1914 (Dec. 7) 1918.

2. Solidaridad Médica Americana, Crón. méd.-quir. de la Habana **44**: 487 (Sept.) 1918; El Pan Americanismo cientifico, ibid. **44**: 535 (Oct.) 1918.

OASES

The country is really going dry. Still there seems to be hope for the alcoholically thirsty. So long as one of the largest mail-order houses in the country continues to sell *Vinum Carnis et Ferri, N. F.* in gallon jugs the drought may not be as noticeable as it might otherwise. Seriously, however, isn't it about time for the professions of medicine and pharmacy to heave into the discard such utterly unscientific combinations as "Beef, Wine and Iron"?

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending February 7, the Medical Corps contained 22,821 officers, a decrease from the previous week of 603. The Medical Reserve Corps contained 626 officers. The total number of medical officers discharged since the beginning of the war is 13,753.

Archangel Medical Corps for American Troops

The commanding general at Archangel, after a personal inspection of the hospitals and dressing stations of the Siberian forces, has sent a cablegram to the British War Office in which he states that the medical arrangements are excellent. Less than 4 per cent. of the American troops are in hospitals. Evacuation of casualties over 120 miles of road by sledge has been carried out efficiently and with the least possible suffering to the patients. The sanitation of the country is poor, but is being bettered by every means available. There is hospital accommodation for 20 per cent. of the Allied and American troops of the force, and this percentage can easily be increased. It is stated that there are plenty of medical supplies and equipment, including a railway ambulance train accommodating 100 patients; there are also 100 ambulance sledges.

Destination of Sick and Wounded Air Men

The War Department announces that sick and wounded men of the air service flying personnel, on arrival at ports of debarkation will be sent to the U. S. Army General Hospital No. 2, Fort McHenry, Baltimore, or if convalescent to the Air Service Depot, Garden City, L. I., N. Y. Flying personnel patients when convalescent will be sent either to the Military Convalescent Hospital, Cooperstown, N. Y., or to the Air Service Depot, Garden City, L. I. The necessary transport history will be sent with patients in all cases to the medical board at the Air Service Depot.

Slightly Wounded

The following medical officers have been reported as having been slightly wounded: Arthur L. Weisgerber, Capt., Perry, Kan.; John L. Riley, Lieut., Henryetta, Okla.; Francis Michael Ginley, Lieut., Dunmore, Pa.; David Chapman Bull, Lieut., Naugatuck, Conn.; Othel J. Gee, Lieut., Timpson, Texas; Frank H. Long, Lieut., Buffalo; Thel Hooks, Lieut., Smithfield, N. C.; Maurice Exiner, Lieut., New York City; Angus J. Smith, Lieut., Greenville, Fla.; Harold V. Raycroft, Lieut., Brooklyn; Hilmer Thorer Skovholt, Lieut., Williston, N. D.; George H. Spivey, Lieut., Hollandale, Miss.; Walter Williamson Manton, Capt., Detroit; Thomas C. Ross, Capt., Philadelphia, and William Henry J. O'Brien, Lieut., New York City.

Wounded, Degree Undetermined

The following medical officers have been wounded (degree undetermined): Edward H. Atkin, Lieut., Hoisington, Kan.; Harry S. Van Etten, Lieut., Stroudsburg, Pa.; Thomas M. Moore, Lieut., Hagood, S. C.; Eugene Robert Van Meter, Lieut., St. Louis; Samuel J. Marks, Lieut., Philipsburg, Pa.; Paul Rainey McLaughlin, Major, Guysville, Ohio; Martin A. O'Brien, Lieut., Cleveland; Frank Brady, Lieut., Dawson, N. M.; Harvey C. Updegrove, Lieut., Easton, Pa.; William W. Walcott, Lieut., Natick, Mass.; Clinton B. Staley, Lieut., Enfield, Ill.; George L. Stickney, Capt., Baltimore; Myron Hall Farmer, Capt., Newman, Ga.; Arthur W. Hubbard, Lieut., Wyoming, N. Y.; Bertram H. Buxton, Lieut., Providence, R. I.; Guy Seward, Capt., Leola, Iowa; George W. Krick, Lieut., Reading, Pa.; Lee C. Gatewood, Capt., Chicago, and Thomas J. McHugh, Lieut., Nashville, Tenn.

Severely Wounded

The following medical officers have been reported as having been wounded severely: William Mathias Hoel, Lieut., Lockwood, Mo.; John H. Gilpin, Capt., Fort Wayne, Ind.; Gilbert M. Roberts, Capt., Chattanooga, Tenn.; Samuel Zuckerman, Lieut., New York City; Carl L. Cline, Capt., Dayton, Ohio; James H. S. Morrison, Capt., Cumberland Gap, Tenn.; Edwin L. Lawson, Lieut., Sylvester, Ga.; Zodoc L. Weatherford, Lieut., Red Bay, Ala.; Henry B. Beeson, Capt., Cornell, Wis.; George R. Baker, Capt., Tomahawk, Wis.; Leo D. Applewhite, Capt., East St. Louis, Ill.; Myron Hanna, Lieut., Deshler, Ohio; Max R. Charlton, Capt., Spokane, Wash.; Clyde W. Jump, Capt., Tacoma, Wash., and Thomas R. Gagion, Capt., Pittston, Pa.

Prisoners Released

The following officers reported as prisoners have been released from the German prison camp at Villingen: Bernard J. Gallagher, Lieut., Minneapolis; Franklin B. Pedrick, Lieut., Washington, D. C.; James Earl Quigley, Lieut., Adrian, Pa.; John T. Hardesty, Capt., Winfield, Mo.; Arthur A. Mitten, Capt., Milwaukee; Arthur H. Sewing, Capt., St. Louis; Maurice S. Redmond, Lieut., Pittsburgh; Robert B. Rhett, Lieut., Charleston, S. C.; Henry Leo Rothman, Lieut., Washington, Mo.; Guy D. Tibbetts, Lieut., Bennington, N. H.; Dirk Bruins, Major, St. Petersburg, Fla.; Benjamin P. Burpee, Capt., Manchester, N. H., and Howard Francis Kane, Capt., Bangor, Me.

Erroneous Reports

John H. Shaw, Lieut., M. C., U. S. Army, Plymouth, Mass., has been erroneously reported to have been killed in action. ——Walter N. Mundell, Capt., M. C., U. S. Army, Hutchinson, Kan., is erroneously reported to have died from disease.

Missing

The following medical officers have been reported as missing in action: John G. Skilling, Lieut. Lonaconing, Md.; John Walter McElroy, Rebecca, Ga., and Harry C. Preston, Lieut., New York City.

Distinguished Service Awards

The commander in chief in the name of the President has awarded the distinguished service cross to the following named officers:

KARL J. SWENSON, Captain, M. C., U. S. Army, Portland, Ore., 316th Sanitary Train. For repeated acts of extraordinary heroism in action near Very, France, September 28, to October 30, to November 3, 1918. During the drive in the Forest of Argonne, Captain Swenson established and maintained a dressing station at Very under almost constant aerial raids and severe shell fire. During the operations between the Lys and Scheidt Rivers this officer repeatedly showed utter disregard for his own life, maintaining liaison between his own advanced dressing station and the battalion aid stations and searching for wounded on the battle field while he was exposed to heavy fire from artillery, machine gun, and snipers.

DONALD MINER, Major M. C., U. S. Army, Jersey City, N. J., 113th Infantry. For extraordinary heroism in action at Ormont Farm, France, October 10, 1918. Major Miner, voluntarily proceeded under heavy shell fire to an advanced aid station. For four hours he worked unceasingly aiding the wounded and evacuating them. Finding that he could work more effectively without his gas mask, he discarded it, so that it would not hinder him in attending wounded men.

LOUIS DIENER, Captain, M. C., U. S. Army, Baltimore, Sanitary Detachment 112th Machine Gun Battalion. For extraordinary heroism in action in the Ravine de la Veux Mechieux, France, Oct. 26-27, 1918. Upon being notified that an enemy shell had struck a dugout occupied by the brigade radio detachment, Captain Diener ran to the aid of the buried men and worked tirelessly to rescue them. Despite the fact that numerous gas and high-explosive shells were falling in the vicinity, he continued his efforts until he was certain that the three men remaining in the ruined dugout were dead.

JOHN F. DOUDNA, Lieut., M. C., U. S. Army, 362d Infantry, Lake City, Mich. For extraordinary heroism in action. This officer was under constant shell fire with his battalion for 17 days, and though he had been painfully wounded by a machine-gun bullet, he remained at his post, rendering first aid to the wounded night and day, performing the duties of two other medical officers who had been incapacitated, in addition to his own. Lieut. Doudna's utter disregard for personal danger and complete devotion to duty made possible the rapid evacuation of the wounded, thus materially keeping up the morale of the combat troops, and alleviating the suffering of the wounded.

WILLIAM R. ARRANTS, Lieut., M. C., U. S. Army, 317th Infantry, Decatur, Tenn. For repeated acts of extraordinary heroism in action in the Bois de la Cote Lemont, France, Sept. 28, 1918, and near Nantillois, France, Oct. 5, 1918. He with his battalion aid unit accompanied his battalion into action in the Bois de la Cotte Lemont and promptly opened his aid station within 100 yards of the front line, where he worked all night under continuous fire giving aid to the wounded. When there was a shortage of stretcher bearers he assisted in bringing in the wounded. Under intense fire he undertook to locate the ambulance dressing station and personally directed the evacuation of wounded to it. In the attack from the Bois de Fay, October 5, he again went with the attacking troops and opened a first aid station

in an old cellar with no cover. Under an intense barrage of shrapnel and high explosive shells he performed the most devoted service in attending the wounded working continuously for nine hours until after his unit had been ordered to retire.

REUBEN G. HAMILTON, major, M. C., U. S. Army, Ambulance Section, 101st Sanitary Train, Rockton, S. C. For extraordinary heroism in action near Marcheville, France, Sept. 25-26, 1918. He established and maintained an ambulance dressing station in an advanced and hazardous position, where he labored unceasingly, treating and evacuating the wounded, throughout the day, in full view of the enemy and under heavy bombardment. Knowing that our troops were withdrawing and the enemy was about to enter the town, he continued his aid to the wounded, even after permission to withdraw had been given him by his commanding officer.

OGDEN DOREMUS KING, Lieut., M. C., U. S. Navy, attached to the 6th Machine Gun Battalion, United States Marine Corps. For extraordinary heroism in action near the Bois de Belleau, June 9-10, 1918. On two successive days the regimental aid station in which he was working was struck by heavy shells and in each case demolished. Ten men were killed and a number of wounded were badly hurt by falling timbers and stone. Under these harrassing conditions this officer continued without cessation his treatment of the wounded assisting in their evacuation and setting an inspiring example of devotion and courage to the officers and men serving under him.

WILLIAM TIGNOR GILL, Jr., Lieut., M. C., U. S. Navy, Washington, D. C., attached to the 6th Regiment, United States Marine Corps. For extraordinary heroism in action neaer Vierzy, France, July 19, 1918. He established a forward dressing station behind the advanced lines and for 15 hours treated the wounded and directed their evacuation while subjected to intense front and flank fire and in the absence of adequate shelter. His fearlessness under these conditions saved the lives of many wounded who would otherwise have been lost to the service. He disregarded personal danger and remained in an exposed position in order to give immediate care to the unfortunate.

JOEL THOMPSON BOONE, Lieut., M. C., U. S. Navy, attached to the 6th Regiment, United States Marine Corps, for extraordinary heroism in the Bois de Belleau, France, June 9-10 and 25, 1918. On two successive days in the regimental aid station in which he was working was struck by heavy shells and in each case demolished. Ten men were killed and a number of wounded were badly hurt by falling timbers and stone. Under these harrassing conditions this officer continued without cessation his treatment of the wounded, superintending their evacuation, and setting an inspiring example of heroism to the officers and men serving under him. On June 25, 1918, Surg. Boone followed the attack by one battalion against enemy machine gun positions in the Bois de Belleau, establishing advanced dressing stations under continuous shell fire.

JAMES G. HALL, Lieut., M. C., U. S. Army, 316th Infantry, Atlanta, Ga. For extraordinary heroism in action near Montauville, France, Sept. 12-15, 1918. In spite of severe wounds, including two broken ribs, received on the first day of the action, he continued at his post for three days, administering aid to the wounded throughout the combat. Numbers of lives were saved by his heroism and devotion to duty.

ROBERT O. BLOOD, Capt., M. C., U. S. Army, 103d Infantry, Concord, N. H. For extraordinary heroism in action near Bouresches, France, July 20-23, 1918. He remained with his battalion during the entire advance working untiringly under heavy enemy fire at all times, superintending the evacuation of the wounded and caring for them in the most dangerous and exposed positions. On July 22 he established his dressing station in an advanced position that was constantly under shell fire, and many times left his station to go into the front lines to treat the wounded.

ROBERT H. MURDOCK, Lieut., M. C., U. S. Army, 47th Infantry, Wilkes-Barre, deceased. For repeated acts of extraordinary heroism in action at Sergy, France, July 29-31, 1918, and at St. Thibaut, France, August 6-12, 1918. Accompanying his battalion in the attack on Sergy, he advanced for more than a mile under heavy shell fire, and as soon as the southern half of the town had been taken he established his dressing station, maintaining it during the three days of fighting under constant and severe bombardment. When his battalion went into action at St. Thibaut this faithful officer again displayed heroic devotion to duty by working in his dressing station under the most trying conditions for six days while the town was bombarded with gas and high explosive shells.

LEO J. CRUM, Lieut., M. C., U. S. Army, 126th Infantry, Kalamazoo, Mich. For extraordinary heroism in action near Cierges, France, July 31 and August 1, 1918. During the attack against Cierges by his regiment he worked continuously and heroically under fire to treat and evacuate the wounded. When the house in which his first-aid station was located was struck by an enemy shell he safely evacuated all of his patients and promptly established another aid station near the front. His untiring efforts and personal bravery saved the lives of many wounded and suffering men and were a source of inspiration to the entire command.

FRANK L. WILLIAMS, Lieut. M. C., U. S. Army, 168th Infantry, Des Moines, Ia. For extraordinary heroism in action in Champagne, east of Reims, France, July 15, 1918, and near the River Ourcq, northeast of Chateau-Thierry, France, July 30, 1918. He voluntarily left a dugout on the Champagne front, and for more than two hours, all the time under shell fire, administered to the needs of wounded men who were lying in the open. During the advance across the River Ourcq he voluntarily remained in exposed positions under heavy shell fire, caring for and dressing the wounded, until he was severely injured.

GEORGE H. GAGE, Capt., M. C., U. S. Army, 28th Infantry, Rochester, N. Y. Conspicuous for his courage in the actions at Rambucourt on March 17, 1918, and at Cantigny, May 28, 1918, he gave inspiration to the officers and men of the command by his extraordinary heroism throughout the operations south of Soissons, July 18 to 22, 1918, and especially at Berzy-le-Sex, July 21, 1918, when he accompanied the first line and attended the wounded in the open under incessant machine gun and artillery fire.

FREDERICK W. BLACK, Capt., M. C., U. S. Army, 28th Infantry, Punxsutawney, Pa. For extraordinary heroism in action near Soissons, France, July 18-22, 1918. He went over the top to the attack in the first wave and was wounded on the morning of the first day. Disregarding his wound, he pressed on with the attacking troops and crossed and recrossed the sector immediately behind the most advanced wave, rendering first aid to wounded and placing them in shell holes. He worked unceasingly without sleep or rest and was again wounded on the fourth day by shell fire. Though twice wounded, he steadily refused to be evacuated until the evening of the fourth day, when he was exhausted and suffering from his wounds.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list, L., signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel; Col., colonel, and B. G., brigadier-general.

ALABAMA

Ariton—McFadden, A. D. (L.)
Birmingham — Watterston, C. J. (Col.)
Wood, N. I. (L.)
Ensley—Robbins, W. J. (L.)
Forkland—Legar, J. K. (C.)
Huntsville—Wilson, F. B. (C.)
Jasper—Shepherd, R. H. (L.)
Montgomery—McConnico, F. H. (C.)
Sellers, W. A. (C.)
Thigpen, C. A. (M.)
Mount Vernon—Cowden, A. M. (L.)

ARIZONA

Benson—Thompson, E. B. (L.)
Johnson—Snyder, G. C. (L.)
Prescott—Carmichael, A. B. (L.)

ARKANSAS

Conway—McCallum, I. N. (C.)
Dermott—Baker, E. (L.)
Hot Springs—Smith, J. H. (L.)
Uniontown—Mitchell, J. D. (L.)

CALIFORNIA

Long Beach—Hamman, A. F. (C.)
Harvey, E. R. (L.)
Los Angeles—Boyd, G. T. (L.)
Conroy, C. L. (C.)
Oakland—Lohse, J. L. (C.)
Parlier—McKenney, J. A. (L.)
Sacramento—Davis, H. J. (L.)
San Diego—Hardy, G. F. (L.)
San Francisco—Baer, A. B. (C.)
Brown, V. D. (C.)
Chipman, E. D. (C.)
Taylor, P. A. (C.)
San Jose—Hall, J. U. (C.)
Whiffen, R. A. (C.)
Wise, P. L. (L.)
Trinity Center — Rowell, W. A. (C.)
Visalia—Todd, H. A. (L.)

COLORADO

Boulder—Kirkwood, R. C. (M.)
Colorado Springs — Webb, G. B. (L. C.)
Fort Morgan—Wells, N. D. (C.)
La Junta—Stubbs, A. L. (C.)
Loveland—Yates, W. W. (L.)
Pueblo—Keeney, M. J. (C.)

CONNECTICUT

Ellington—Brace, E. A. (C.)
New Haven—Elliston, R. L. (L.)
Prince, A. L. (C.)
Raynolds, R. (L.)
Waterbury—Smith, G. M. (C.)
Waterville — Godfrey, E. J., Jr. (L.)
West Cornwall—Grand—Lienard, R. J. (L.)

DELAWARE

Wilmington—Howell, H. W. (C.)

DISTRICT OF COLUMBIA

Washington—Dnnn, H. F. (L.)
Key, S. (C.)
Norton, W. H. (L.)

FLORIDA

Jacksonville—Driskell, S. E. (L.)
Holden, G. R. (C.)
Jasper—Tompkins, R. D. (L.)
Madison—Long, E. (C.)
Ocala—McClane, F. E. (C.)
West Palm Beach—Cooley, R. O. (L.)

GEORGIA

Athens—Foster, R. B. (L.)
Atlanta—Paullin, J. E. (M.)
Clermont—Cheek, P. (L.)
Columbus—Griffith, R. P. (C.)
Douglas—Coleman, A. S. M. (L.)
Douglasville—Hamilton, R. E. (C.)
Louisville—Revell, S. T. R. (L.)
Quitman—Ward, J. A. (L.)
Rome—Shaw, W. J. (C.)
Rydal—Bradford, H. B. (L.)
Sandersville—Hannah, L. (L.)
Valdosta—Quarterman, P. C. (L.)

IDAHO

Hill City—Bloom, O. E. (L.)
Laclede—King, M. R. (L.)
New Plymouth—Drysdale, W. T. (L.)
Sandpoint—Anderson, E. T. (C.)

ILLINOIS

Altamont—Baker, C. H. (L.)
Benton—Alvis, W. H. (L.)
Bloomington—Galford, G. H. (L.)
Canton—Zeigler, W. T. (C.)
Chambersburg — McIntosh, J. H. (L.)
Champaign—Cavenee, E. L. (L.)
Chicago—Allport, W. H. (M.)
Balsinger, W. E. (L.)
Davis, F. A. (C.)
Doane, P. S. (L. C.)
Formusa, A. C. (L.)
Greening, R. F. (L.)
Hamburger, W. W. (M.)
Kanavel, A. B. (Col.)
Kell, C. T. (L.)
Lawson, G. W. (L.)
McKellar, M. (L.)
Mead, D. O. (L.)
Mowry, A. E. (C.)
Powell, C. S. (L.)
Quigley, W. J. (C.)
Springwater, S. A. (C.)
Tubergen, B. F. (L.)
Danville—Montfort, R. M. (L.)
Decatur—Schultz, H. L. (L.)
Dwight—Wilkinson, M. H. (L.)
Edwardsville—Wahl, E. F. (C.)
Evanston—Fiske, E. W. (L.)
Findlay—Gregory, C. S. (L.)
Galesburg—Stotts, A. F. (M.)
Highland—Kempff, J. W. (L.)
Ladd—Toothaker, J. E. (L.)
Lake Forest — Proxmire, T. S. (L. C.)
LeRoy—Thompson, O. M. (L.)
Murrayville—Spencer, J. H. (L.)
Naperville—Truitt, R. L. (C.)
Opdyke—Williamson, T. B. (C.)
Owaneco—Tankersley, G. A. (L.)
Pana—Littlejohn, D. M. (L.)
Shelbyville—Thompson, T. (L.)
Woodland—Dowsett, C. H. (L.)

INDIANA

Borden—Stalker, J. B. (C.)
Denver—Waymire, E. S. (L.)
East Chicago—Hale, R. P. (L.)
Fort Wayne—Calvin, W. D. (L.)
Gilpin, J. H. (C.)

Gary—Schaible, E. L. (L.)
Gilman—Armstrong, P. (L.)
Greenfield—Sisson, E. R. (C.)
Indianapolis—McCool, J. F. (L.)
Reynolds, D. M. (C.)
Lafayette—Crockett, F. S. (C.)
New Albany—Windstandley, W. C. (C.)
Newburgh—Munns, C. J. (L.)
Petersburg—Imel, E. S., Sr. (C.)
Richmond—Grosvenor, J. J. (L.)
Roachdale—Collins, C. C. (C.)
Waldron—Coulson, S. B. (L.)
West Lebanon—Dale, H. W. (C.)

IOWA

Battle Creek — Benedict, E. P. (L.)
Davenport—Lambach, F. (C.)
Decorah—Jewell, M. D. (C.)
Elkhart—Ketchum, P. V. (L.)
Farmersburg—Ross, J. C. (L.)
Fort Dodge—Garrett, J. M. (C.)
Gravity—Reed, L. T. (L.)
Inwood—Stewart, A. P. (L.)
Lorimer—Ayres, E. C. (C.)
Mason City—Egloff, W. J. (C.)
Minden—Augustine, G. (C.)
Montezuma—King, O. W. (M.)
Neola—Bates, W. A. (C.)
New London—Boggs, N. (C.)
Storm Lake—O'Donohue, J. H. (C.)
Walnut—Latchem, R. L. (L.)
Waterloo—Hoffmann, A. A. (L.)
West Point—Dierker, F. H. (L.)

KANSAS

Caldwell—McKinnon, J. C. (L.)
Delphas—Settle, J. A. (C.)
Hays—Anders, C. C. (L.)
Meriden—Taylor, R. A. (L.)
Osawatomie — Robinson, P. W. (C.)
Ottawa—Shiras, H. H. (L.)

KENTUCKY

Covington—Eckman, W. G. (L.)
Hanson—Morton, C. R. (L.)
Hillsboro—Rawlings, H. F. (L.)
Horse Cave—Edwards, P. (L.)
Littrell—Webb, J. R. (L.)
Louisville—Brennan, J. A. O. (C.)
Coolidge, W. L. (C.)
McCown, N. C. (L.)
Lucas—York, J. W. (L.)
Paducah—Pulliam, S. B. (C.)
Waverly—Neary, B. J. (C.)

LOUISIANA

Monroe—Gladden, A. H. (C.)
New Orleans—Clark, S. M. D. (M.)
Hayes, W. M. (L.)
Holloway, L. W. (L.)
Johnson, W. M. (L.)
Newhauser, M. A. (C.)
Roeling, G. W. L. (L.)
Shreveport—Rougon, I. B. (L.)

MAINE

Caribou—Thomas, C. F. (L.)
Damariscotta — Sherman, W. H. (L.)
Lake View—Bundy, H. C. (L.)
Lewiston—Morin, R. J. (L.)
Portland—Little, A. H. (C.)

MARYLAND

Baltimore—Bloodgood, J. C. (M.)
Breeding, E. G. (C.)
Fisher, W. A. (L. C.)
Johnson, H. H. (L.)
Thayer, W. S. (B. G.)
Wheeler, E. M. (L.)
Young, H. H. (Col.)
Cantonville—Baetjer, F. H. (M.)
Crownsville—Lewis, N. D. C. (L.)

MASSACHUSETTS

Atlantic—Sweeney, M. T. (L.)
Boston—Akerley, A. W. K. (C.)
Hyde, H. V. (L.)
Malone, C. (C.)
Parker, W. S. (M.)
Peabody, F. W. (M.)
Riley, C. A. (C.)
Stone, J. S. (M.)
Streeter, E. C. (C.)
Fall River—Jackson, J. P. (L.)
Framingham—Regan, E. F. (L.)
Haverhill—Chaput, L. R. (L.)
Hyannis—Chase, P. P. (C.)
Harris, C. E. (C.)
Lowell—Sumner, H. H. (C.)
North Abington—Wheatley, F. G. (M.)
Shelburne Falls—Upton, C. L. (C.)
Springfield—Tracy, J. M. (C.)
Waltham—Curtin, J. J. (L.)
Whitman—Pulsifer, W. H. (L.)
Worcester — MacIntyre, W. A. (L.)
McMahon, W. E. R. (L.)
Simmons, H. L. (L.)

MICHIGAN

Albion—Hafford, G. C. (M.)
Ann Arbor—Brownell, M. E. (L.)
Kingery, L. B. (L.)
Columbiaville—Chapin, C. D. (C.)
Detroit—Newitt, A. W. (L.)
Ohrt, H. F. (L.)
Evart—Hoverter, J. W. (L.)
Flint—Cook, H. (L.)
Oxford—Gibson, L. E. (L.)
Pontiac—Bachelder, F. S. (C.)
Saginaw—Crane, B. F. A. (C.)
Vicksburg—Coller, F. S. (L.)
Wakefield—Crosby, T. S. (C.)

MINNESOTA

Adrian—Arnold, E. W. (L.)
Delano—Lares, B. V. (C.)
Duluth—Grant, F. A. (C.)
Johnson, J. V. (C.)
Ely—Ayres, G. T. (C.)
Hills—Engstrom, F. A. (C.)
Mankato—Wohlrabe, A. A. (L.)
Minneapolis—Benson, G. E. (C.)
Johann, A. E. (L.)
Watson—Gilkey, S. E. (C.)

MISSISSIPPI

Biloxi—Ballar, J. C. (M.)
Bude—Warren, G. T. (L.)
Cleveland—Sparman, A. A. (C.)
Crowder—Mann, J. M. (L.)
Jackson—Plunkett, B. J. (C.)
Mount Olive—White, J. P. (L.)
Scoaba—Mooney, J. B. (C.)
Tupelo—Carruth, R. W. (L.)

MISSOURI

Ashley—Hereford, R. G. (L.)
Breckenridge—Chaffin, W. L. (L.)
Cardwell—Birchett, J. G. (C.)
Dearborn—Durham, S. L. (L.)
Fulton—McCall, G. D. (C.)
Houston—Blankenship, E. P. (C.)
Joplin—King, W. R. (L.)
Kansas City—Dawson, L. V. (L.)
Hagaman, V. (C.)
Smith, J. H. (C.)
Swanson, J. T. (L.)
Liberty—Major, R. H. (C.)
Princeton—Powell, B. S. (L.)
Sedalia—Meyers, H. A. (L.)
St. Louis—Brennan, J. W. L. (L.)
Fay, H. W. (L.)
Goldberg, D. D. (L.)
Meyer, W. F. (L.)
Murphy, F. T. (Col.)
Proetz, A. W. (C.)
Schreiber, L. W. (L.)
Steffenville—Elliott, S. W. (C.)
Tarkio—Benham, C. E. (L.)
Trenton—West, W. E. (L.)
Warrensburg—Parker, H. F. (L.)
Webb City—Dumbauld, B. A. (C.)
West Alton—Pennington, G. R. (L.)

MONTANA

Butte—Traner, E. W. (L.)
Kalispell—Greusel, C. N. (C.)
Moccasin—Estabrook, W. E. (L.)

NEBRASKA

Alliance—Copsey, H. A. (C.)
Aurora—Hustead, C. D. (L.)
Benkelman—Picken, E. A. (L.)
Falls City—Cowan, S. D. (L.)
Fremont—Rathbun, G. H. (C.)
Lincoln—Crutcher, W. H. (L.)
Omaha—Cutter, L. S. (C.)
Schuyler—Schnetzky, O. P. (L.)
Springfield—Kieck, E. G. (L.)

NEW HAMPSHIRE

Hempstead—Lake, E. E. (L.)
Manchester—Ester, G. S. (C.)
Nashua—Brownrigg, A. E. (M.)
Peterboro—Foster, F. B. (C.)

NEW JERSEY

Boonton—Arbuckle, H. (C.)
Bound Brook—Leahy, J. T. (L.)
Butler—Thorne, W. P. (L.)
Dover—Ackermann, E. (C.)
Gloucester City—Beek, J. A. (L.)
Jersey City—Rosenstein, J. L. (L.)
Newark—Buermann, W. (C.)
Gennell, E. (L.)
Orange—Von Hofe, F. H. (C.)
Passaic—Joseph, M. (L.)
Perth Amboy—Fithian, G. W. (C.)
Princeton—Paton, S. (M.)
West Hoboken—Pellarin, J. D. (L.)

NEW MEXICO

Albuquerque—Sheridan, W. M. (L.)
Clovis—Dillon, F. A. (C.)
Dexter—Hubbard, E. J. (L.)

NEW YORK

Albany—Elting, A. W. (L. C.)
Jenkins, T. W. (C.)
Wansboro, W. J. (C.)
Alfred—Ayars, E. W. (C.)
Brockport—Mann, H. J. (C.)
Brooklyn—Greenberg, L. (L.)
Herrman, W. G. (L.)
Jennings, F. B. (C.)
Lerner, J. G. (L.)
Madden, W. L. (L.)
Marinaro, F. X. (L.)
O'Loughlin, J. J. (L.)
Reitz, G. B. (C.)
Buffalo—Goodale, W. S. (M.)
Lormor, E. H. (L.)
Canandaigua—Armstrong, A. W. (C.)
Elmhurst—Combes, A. C. (L.)
Franklinville—Hammond, H. W. (L.)
Hamilton—Beebe, L. C. (C.)
Kingston—Maben, B. W. (C.)
Manhasset—Niesley, C. M. (C.)
Newark—Morrissey, J. A. (L.)
New York—Avery, O. T. (C.)
Binderman, S. A. (L.)
Brady, T. A. (L.)
Busby, A. H. (M.)
Cohn, A. E. (L. C.)
Collins, J. (M.)
Connell, K. A. (M.)
Corbin, R. A. (L.)
Draper, G. (L. C.)
Foratz, C. E. (L.)
Horowicz, B. S. (C.)
Joyce, E. C. (C.)
Lintz, J. (L.)
Lothringer, D. (C.)
McConnell, R. H. (M.)
Meylackson, S. L. (C.)
Michie, O. C. (M.)
Miller, W. C. (M.)
Moore, A. H. (C.)
Peck, C. H. (Col.)
Pool, E. H. (L. C.)
Quinn, A. G. (C.)
Trattner, S. (L.)
Unger, A. S. (L.)
Watkins, J. T. (L.)
Yampolsky, I. (L.)
Northport—Delaney, W. J. (L.)
Ossining—Glueck, B. (C.)
Ozone Park—Howard, J. G. (C.)
Rochester—Brown, R. J. (L.)
Cook, E. B. (L.)
Davidson, S. C. (L.)
Palmer, M. B. (C.)
Schenectady—Reed, F. C. (C.)
Setauket—Russell, I. J. (L.)
Skaneateles—Hall, H. P. (C.)
Staten Island—MacGuire, D. P. (L.)
Syracuse—Moore, B. S. (C.)
Walton—Gladstone, E. R. (L.)
Waterford—Buhan, H. P. (L.)
White Plains—Parker, J. S. (C.)

NORTH CAROLINA

Gatesville—Rawls, J. L. (L.)
Greensboro—Banner, C. W. (C.)
Greenville—Greene, J. C. (L.)
Lenoir—Wilson, C. L. (L.)
Pinnacle—Bernard, H. (L.)
Sylva—Candler, C. Z. (C.)

NORTH DAKOTA

Fargo—Oftedal, S. (C.)

OHIO

Athens—Sprague, J. R. (L.)
Bellaire—Ring, P. L. (L.)
Bryan—Replogle, M. V. (C.)
Cambridge—Miller, O. F. (L.)
Canton—Rice, H. A. (C.)
Centerburg—Phillips, W. O. (C.)
Cincinnati—Cole, A. P. (C.)
Friedlander, A. (M.)
Hulick, T. (L.)
Willis, B. C. (C.)
Cleveland—Dunlap, A. M. (L.)
Monihan, J. R. (L.)
Norrick, J. H. (L.)
Shuhe, H. (L.)
Cleveland Heights—Crile, G. W. (Col.)
Columbus—Freeman, A. W. (M.)
Hamilton, C. S. (M.)
Hays, S. B. (L.)
Defiance—Winn, G. E. (C.)
Dover—Keller, W. R. (L.)
Fredericktown—Cole, R. E. (L.)
Greenville—Husted, E. G. (L.)
Guysville—Harper, E. D. (C.)
Johnstown—Burner, G. W. (C.)
Kenton—Fox, D. C. (L.)
Latty—Mouser, A. H. (C.)
Logan—Lyon, C. C. (L.)
Marietta—McCowan, J. A. (L.)
Middletown—Reed, C. W. (C.)
Shipe, W. T. (C.)
Silver, H. (L.)
New Athens—Holliday, E. G. (L.)
Sherwood—Conley, F. W. (L.)
Springfield—Rodebaugh, G. C. (L.)
Toledo—Davis, J. R. (L.)
Kahn, D. (L.)
LaSalle, J. J. (C.)
Rhonehouse, W. L. (L.)
Willoughby, L. A. (C.)

OKLAHOMA

Alva—Fewkes, J. M. (L.)
Enid—McKee, E. N. (L.)
Erick—McCreery, R. C. (C.)
Gould—Husband, W. G. (C.)
Granite—Nunnery, T. J. (L.)
Hallett—Calhoun, R. E. (L.)
Hugo—Askew, E. R. (L.)
Wolfe, R. (L.)
Kinta—Johnson, E. (L.)
Millerton—Moseley, F. (L.)
Pauls Valley—Shannon, J. B. (L.)
Temple—Halsted, A. B. (L.)
Tulsa—Springer, M. P. (L.)
Trainor, W. J. (L.)

OREGON

Amity—Wood, R. L. (L.)
Eugene—Scaiefe, B. F. (C.)
Maupin—Elwood, J. L. (L.)
Vale—Brown, F. J. (L.)

PENNSYLVANIA

Altoona—Brumbaugh, A. S. (C.)
Bradford—Walker, G. H. (C.)
Carrolltown—Arble, E. F. (C.)
East Brady—Harter, T. H. (L.)
Freeland—Bedelin, A. A. (L.)
Hoboken—Foster, J. L. (L.)
Kulpmont—Cooner, C. C. (C.)
Lewisburg—Thornton, H. R. (L.)
Lititz—Hertz, J. L. (C.)
Lock Haven—Mervine, G. D. (C.)
Markleton—Smeltz, G. W. (C.)
McVeyton—Steele, B. P. (C.)
Meadow Lands—Gormley, J. A. (L.)
Miner Mills—Hislop, J. J. (C.)
Minersville—McGurl, T. J. (L.)
Norristown—McCracken, J. A. (C.)
Philadelphia—Birney, H. H. (C.)
Chandlee, W. H. (C.)
Ersner, M. S. (L.)
Goodman, E. H. (M.)
Harte, R. H. (Col.)
Hughes, C. C. (L.)
Hunter, R. J. (M.)
Manges, W. F. (L. C.)
Martin, E. (L. C.)
McLean, J. D. (M.)
Miller, C. S. (L.)
Mintzer, G. S. (M.)
Mohler, H. K. (C.)
Russell, E. D. (L.)
Watt, R. (C.)
Whiteway, H. M. (C.)
Philipsburg—Thompson, H. H. (L.)
Pittsburgh—Barkley, A. W. (L.)
Boyce, J. W. (M.)
Bremer, F. W. (L.)
Flinn, J. E. (L.)
Norton, F. B. (C.)
Rudolph, F. W. (L.)
Stevenson, A. M. (C.)
Weirberg, M. H. (L.)
Wildhaber, W. T. (L.)
Reading—Dreibelbis, S. L. (L.)
Erdman, T. F. (L.)
Levan, G. K. (L.)
Winston, G. I. (L.)
Sayre—Murray, A. H. (L.)
West Chester—Palmer, C. R. (C.)
Willow Grove—Dunn, A. W. (C.)
York—Wentz, P. N. (L.)

RHODE ISLAND

Providence—Rushton, P. H. (L.)

SOUTH CAROLINA

Bamberg—Stuckey, H. J. (L.)
Greenwood—Routh, F. M. (L.)
Turner, W. P., Jr. (L.)
Starr—Land, J. N. (L.)

SOUTH DAKOTA

Irene—Beall, L. F. (L.)
Oldham—Garrison, J. F. (C.)

TENNESSEE

Elizabethton—Campbell, G. E. (C.)
Memphis—Malone, W. B. (M.)
Nashville — Haggard, W. D. (L., C.)
Whitfield, T. A. (L.)
Pinson—Westover, H. M. (L.)

TEXAS

De Kalb—Crew, C. S. (L.)
Eastland—Roaten, S. P. (L.)
El Campo—Kopecky, J. (L.)
Fort Bliss—Hunter, W. B. (C.)
Fort Worth—Terry, H. H. (L.)
Graham—Duncan, R. A. (L.)
Hillsboro—Smith, B. C. (L.)
Houston—Dickson, T. A. (L.)
Israel, S. P. (L.)
White, A. E. (C.)
Itasca—Hester, J. B. (L.)
Kinsley—Stoltenberg, W. P. (L.)
Maxwell—Nichols, C. (L.)
Mineral Wells—Davis, E. A. (C.)
Nacogdoches—Sweatland, A. E. (C.)
Robey—Reeves, D. H. (L.)
San Antonio—Roberts, R. A. (L.)
Weinfield, L. M. (C.)
Sinton—Elkins, H. T. (L.)
Waco—Lanham, H. M. (C.)

UTAH

Milford—Swanson, C. F. (L.)
Salt Lake City—Skidmore, E. L. (L.)
Woolsey, R. T. (L.)

VIRGINIA

Bon Air—McCluer, B. B. (L.)
Brownsburg—Henkel, H. S. (L.)
Manassas—Merchant, W. F. (C.)
Richmond—Anderson, P. V. (C.)
Roanoke—Slicer, W. S. (L.)

WASHINGTON

Centralia—Lawrence, E. J. (L.)
Monroe—Soll, C. H. (M.)
North Yakima—Weir, C. H. (L.)
Seattle—Everly, W. (C.)
Spokane—Farlye, R. H. (L.)
Vancouver—Lieser, H. C. (M.)

WEST VIRGINIA

Charleston—Godbey, M. V. (C.)
Elm Grove—Houston, J. M. (C.)
Richwood—Wright, E. B. (C.)

WISCONSIN

Berlin—Scott, B. E. (C.)
Bowler—Pfeil, R. C. (L.)
Fennimore—Bailey, M. A. (C.)
Kewaskum—Bendixen, B. O. (L.)
Lake Mills—Leicht, P. (L.)
Milwaukee—Baur, E. F. (C.)
Ruhland, G. C. (M.)
Mount Calvary—Baasen, J. M. (L.)
Oshkosh—Schneider, J. F. (L.)
Sheboygan—Shannon, C. G. (L.)
Viola—Parke, G. (L.)

WYOMING

Diamondville—Van Cott, E. R. (L.)

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Newport News, Va., from Camp Jackson, Capt. J. SCHWARZ, Mobile.

Arkansas

To Camp Abraham Eustis, Va., as camp sanitary inspector, from Camp MacArthur, Major W. H. ABINGTON, Beebe.

To Camp Kearney, Calif., from Hoboken, Capt. D. GANN, Jr., Little Rock.

To Camp Pike, Ark., base hospital, from Camp Hancock, Capt. W. D. JUDKINS, Little Rock.

To Fort Bayard, N. M., from San Antonio, Major P. C. WILLIAMS, Texarkana.

To Whipple Barracks, Ariz., from San Antonio, Lieut. H. M. STRACHAN, Hot Springs.

California

To Alcatraz, Calif., to examine the command for nervous and mental diseases, from Camp Kearney, Capt. E. S. BLAIR, San Bernardino.

To Camp Abraham Eustis, Va., from Fort Oglethorpe, Major R. C. HOWE, San Francisco.

To Camp Beauregard, La., base hospital, from Detroit, Capt. M. P. BURNHAM, San Francisco.

To Camp Knox, Ky., as camp surgeon, from Camp Lee, Lieut.-Col. F. TOWNSEND, San Francisco.

To Camp Lee, Va., base hospital, from Camp Dix, Capt. E. J. BEST, San Francisco.

To Denver, Colo., from Fort Oglethorpe, Lieut. G. A. CLAPP, Lindsay.

To Fort Riley, base hospital, from Camp Cody, Capt. I. W. JONES, Los Angeles.

To Hoboken, N. J., from Camp Dix, Major C. D. LOCKWOOD, Pasadena.

To San Francisco, Calif., Letterman General Hospital, from Camp Dix, Major E. C. MOORE, Los Angeles. From Vancouver Barracks, Majors W. L. DUNN, Oakland; G. R. HUBBELL, Capt. C. F. GRIFFIN, San Francisco.

To report to the commanding general, Southern Department, from Fort Bliss, Lieut. C. C. OWEN, San Bernardino. Western Department, from Camp Fremont, Capt. W. O. HOWELL, San Francisco; from San Francisco, Capt. J. L. WALLER, San Francisco.

To Washington, D. C., Surgeon-General's Office, Major W. B. BOWMAN, Los Angeles.

Colorado

To Camp Sevier, S. C., base hospital, from Camp Wadsworth, Capt. P. HILLKOWITZ, Denver.

To Cooperstown, N. Y., from Millington, Tenn., Lieut. J. B. SALBERG, Boulder.

To Denver, Colo., from Camp Cody, Lieut. T. A. DAVIS, Portland; from Camp Devens, Capt. C. J. LATTA, Sterling.

To Fort Logan, Colo., from Camp Fremont, Capt. L. HOUGH, Denver.

Connecticut

To Army Medical School for instruction, from Camp Dix, Lieut.-Col. G. W. HAWLEY, Bridgeport.

To Camp Logan, Texas, base hospital, from Camp MacArthur, Lieut. R. F. SCHOLL, New Haven.

To Fort McHenry, Md., from Camp Dix, Major W. F. VERDI, New Haven.

To Washington, D. C., Surgeon-General's Office, from Camp Gordon, Capt. R. W. LOWE, Ridgefield.

District of Columbia

To Fort Douglas, Utah, from Fort Oglethorpe, Capt. J. P. KERBY, Washington.

To Fort Sill, Okla., base hospital, from Camp Sevier, Major FRANK LEECH, Washington.

To Hoboken, N. J., from Camp Dix, Capt. H. HUME, Washington.

To Oteen, N. C., from the Surgeon-General's Office, Col. W. J. L. LYSTER.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Col. A. C. CHRISTIE, Washington.

Florida

To report to the commanding general, Philippine Department, from Camp Meigs, Major M. L. CRUM, Bowling Green.

Georgia

To Camp Gordon, Ga., from Fort Oglethorpe, Lieut. R. B. HARDING.

To Camp McClellan, Ala., from Fort Oglethorpe, Major H. R. McKELLAR.

To Lakewood, N. J., from Fort Oglethorpe, Lieuts. A. R. THOMAS, Jr., C. H. SULLIVAN, Zebulon.

To New Haven, Conn., for instruction, from Fort Oglethorpe, Lieut. J. B. ANDERSON.

The following order has been revoked: *To Camp Zachary Taylor, Ky.*, Capt. J. M. SIGMAN, Macon.

Illinois

To Army Medical School, from Fort Oglethorpe, Capt. J. W. HALL, Lieut. J. V. ANDERSON, Chicago.

To Biltmore, N. C., from Camp Wadsworth, Capt. W. W. MELOY, Chicago.

To Camp Grant, Ill., from the Surgeon-General's Office, Lieut. T. J. LAMPING, Chicago.

To Camp Joseph E. Johnston, Fla., base hospital, from Fort Des Moines, Lieut. J. P. GRAF, Chicago.

To Camp Knox, Ky., from Camp Dix, Major F. P. AULD, Shelbyville.

To Camp Meade, Md., base hospital, from Camp Dix, Lieut. B. N. NOVY, Chicago.

To Camp Sevier, S. C., from Camp Bragg, Capt. G. U. LIPSHULCH, Chicago.

To Camp Upton, N. Y., to examine the troops for nervous and mental diseases, from Camp Dix, Lieut. L. C. KNIGHT, Carthage.

To Chicago, Ill., from Camp Grant, Capt. J. H. BRYANT, Galesburg.

To Detroit, Mich., from Camp Grant, Lieut. P. S. SCHOLES, Canton.

To Fort Benjamin Harrison, from Camp Custer, Capt. L. H. DAGGETT, Chicago.

To Fort McPherson, Ga., from Camp Wheeler, Lieut. J. W. MILLER, Chicago.

To Fort Oglethorpe, from Wichita Falls, Capt. R. H. KUHNS, Chicago.

To Fort Sam Houston, Texas, base hospital, from Fort Oglethorpe, Capt. H. S. NORTON, Chicago.

To Fort Sheridan, Ill., from Camp Dix, Major W. R. CUBBINS, Chicago; from Governors Island, Lieut. H. S. BLESSE, South Chicago; from Hoboken, Lieut. E. C. PRATT, Alton; from the Surgeon-General's Office, Lieut.-Col. D. D. LEWIS, Chicago.

To Fort Snelling, Minn., from Camp Joseph E. Johnston, Capt. L. A. BEATON, Chicago; from West Baden, Capt. F. J. LESEMAN, Chicago.

To Hoboken, N. J., from Camp Dix, Majors R. H. DAVIES, G. F. DICK, N. M. PERCY, Chicago.

To Newport News, Va., from Fort Oglethorpe, Lieut. J. A. ABEL, Chicago.

To Rockefeller Institute, for instruction in the treatment of infected wounds, and on completion *to Detroit*, from Camp Upton, Lieut. E. F. Fox, Chicago. On completion *to his proper station*, from Camp Custer, Capt. P. M. OLIVER, Chicago.

The following order has been revoked: *To Camp Crane, Pa.*, Lieut. E. A. CORCORAN, Chicago.

Indiana

To Camp Zachary Taylor, Ky., base hospital, from the Surgeon-General's Office, Capt. E. B. MUHFORD, Indianapolis.

To Detroit, Mich., from Camp Gordon, Lieut. D. T. MILLER, Terre Haute.

To Fort Sheridan, Ill., from Camp Pike, Lieut. T. J. O'NEILL, Anderson.

To Hoboken, N. J., from Camp Dix, Capt. C. E. BARCUS, Indianapolis; from Camp Meade, Lieut. L. H. STAFFORD, Indianapolis.

Iowa

To Camp Hancock, Ga., from the Surgeon-General's Office, Capt. G. H. STEELE, Belmont.

To Fort Des Moines, Iowa, from the Surgeon-General's Office, Major T. A. BURCHAM, Des Moines.

To Fort Logan, Colo., from Camp Grant, Lieut. S. D. JONES, Fort Dodge.

To Fort Riley, base hospital, from Camp Cody, Lieut. G. E. HERMENCE, Marshalltown; from Fort Oglethorpe, Major W. E. DRAPER, Manilla; from Topeka, Lieut. C. D. SHELTON, Bloomfield.

Kansas

To Camp Devens, Mass., as commanding officer, base hospital, from Fort Riley, Lieut.-Col. K. W. KINARD.

To Camp Lee, Va., from Fort Riley, Lieut.-Col. G. W. COOK.

To Camp Zachary Taylor, Ky., as camp surgeon, from Fort Riley, Col. H. F. PIPES.

To Fort Leavenworth, Kan., from Fort Snelling, Capt. W. F. NIENSTADT, Hartford.

To Fort Sam Houston, Texas, from Camp MacArthur, Lieut. D. L. HEIDRICK, Welda.

To Hoboken, N. J., from Camp Dix, Capt. T. RICHMOND, Kansas City.

To Hot Springs, Ark., from Camp McClellan, Capt. F. T. JOHNSTON, Jr., Elmdale.

Kentucky

To Camp Grant, Ill., from Fort Riley, Lieut. E. H. FISCHER, Louisville.

To Columbus Barracks, Ohio, from Camp Travis, Lieut. J. E. EDWARDS, Lancaster.

To Fort Benjamin Harrison, from Camp Sevier, Lieut. W. E. RENDER, Lakeland.

To Hoboken, N. J., from Camp Dix, Lieut. W. B. HUGHES, Newport.

To Richmond, Va., from Hampton, Va., Lieut. C. P. HARROD, South Park.

Louisiana

To Camp Dodge, Iowa, base hospital, from Vancouver Barracks, Lieut. K. W. KINNEY, New Orleans.
To Fort Sam Houston, Texas, from Camp MacArthur, Lieut. R. L. ARMSTRONG, Pleasant Hill.

Maine

To Boston, Mass., from Camp Devens, Capt. L. L. POWELL, Saco.
To Camp Devens, Mass., base hospital, from Fort Des Moines, Capt. W. B. MOULTON, Portland.
To Walter Reed General Hospital, for instruction, from Newport News, Capt. L. B. HAYDEN, Livermore Falls.

Maryland

To Army Medical School, from Camp Dix, Major H. B. MONTGOMERY, Lanham.
To Camp Gordon, Ga., base hospital, from Camp Meade, Major N. M. OWENSBY, Baltimore.
To Fort McHenry, Md., from Camp Dix, Capt. S. M. CONE, Lieut. F. L. JENNINGS, Baltimore.
To Philadelphia, Pa., from Camp Gorden, Capt. T. P. SPRUNT, Baltimore; from Fort McPherson, Lieut. R. V. HOFFMAN, Baltimore.
To Washington, D. C., Surgeon-General's Office, from Camp Dix, Major C. BAGLEY, Jr., Baltimore.
The following order has been revoked: *To Fort Ontario, N. Y.*, from Camp Greene, Capt. A. M. STEVENS, Easton.

Massachusetts

To Army Medical School, from Otisville, N. Y., Capt. G. L. SCHADT, Springfield.
To Boston, Mass., from Camp Dix, Lieut.-Col. G. S. DERBY, Boston; from Fort McHenry, Lieut. W. A. BISHOP, North Abington.
To Camp Devens, Mass., base hospital, from Fort McPherson, Capt. H. J. FITZSIMMONS, Boston.
To Camp Lee, Va., as orthopedic surgeon, Lieut. M. E. SIMMONS, Boston.
To Camp Meade, Md., base hospital, from Camp Lee, Capt. E. V. HARDWICK, Dorchester. *To examine the command* for nervous and mental diseases, from Plattsburg Barracks, Capt. R. A. GREENE, Palmer.
To East Norfolk, Mass., from Camp Logan, Capt. R. G. PROVOST, New Bedford.
To Fort McHenry, Md., from Camp Sheridan,, Capt. T. E. CAULFIELD, Woburn.
To Fort McPherson, Ga., from Camp Meade, Major H. L. CONNER, Haverhill.
To Fort Porter, N. Y., from Camp A. A. Humphreys, Lieut. M. E. COONEY, Northampton; from Camp Devens, Capt. C. J. HUYCK, West Brookfield.
To Hoboken, N. J., from Camp Dix, Major J. J. THOMAS, Boston.
To Pittsburgh, Pa., from Walter Reed General Hospital, Capt. A. U. F. CLARK, Westboro.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station*, from Camp Devens, Lieut. D. S. ADAMS, Boston.
To Washington, D. C., from Camp Dix, Lieut.-Col. A. GREENWOOD, Boston. Surgeon-General's Office, from Camp Dix, Major S. W. ELLSWORTH, Boston.
The following order has been revoked: *To Fort Ontario, N. Y.*, from Camp Greene, Lieut. C. F. SHARRY, Somerville.

Michigan

To Camp Custer, Mich., base hospital, from Camp Dix, Lieut.-Col. P. M. HICKEY, Detroit.
To Camp Dix, N. J., base hospital, from Walter Reed General Hospital, Lieut. E. F. AGNELLY, Detroit.
To Camp Upton, N. Y., from Camp Dix, Capts. J. F. BREAKEY, Ann Arbor; F. H. SMITH, Lieut. A. B. PERSLEY, Detroit. Base hospital, from Camp Lee, Lieut. L. D. STERN, Kalamazoo.
To Cape May, N. J., from Biltmore, N. C., Capt. J. E. J. KING, Detroit.
To Detroit, Mich., from Camp Custer, Major M. W. CLIFT, Flint; from Camp Zachary Taylor, Lieut. A. V. MURTHA, Flint.
To Fort Benjamin Harrison, from Indianapolis, Lieut. H. I. POST, Ypsilanti.
To Fort Sheridan, Ill., from Camp Dix, Capt. J. R. CORYELL, Grand Rapids.
To Hot Springs, Ark., from Fort Des Moines, Capt. J. D. STEWART, Hartford.

Minnesota

To Camp Dodge Iowa, base hospital. from Fort Snelling, Lieut. C. A. TRAEGER, Faribault.
To Camp Grant, Ill., from Camp Lee, Lieut. J. R. WOOD, Hallock.
To Carlisle, Pa., from Fort Riley, Lieut. B. A. BAIRD, Rochester.
To Chicago, Ill., from Camp Grant, Capt. I. SIVERTSON, Minneapolis. On completion *to Washington, D. C.*, Surgeon-General's Office, from Rochester, Col. W. J. MAYO, Rochester.
To Fort Snelling, Minn., from Camp Dix, Lieut. J. H. COSGROVE, Duluth.
To Otisville, N. Y., from Fort Riley, Lieut. R. A. HENNESSEY, Rochester.
To Scituate, Mass., from Camp Dix, Capt. W. M. BOOTHBY, Rochester.
To Washington, D. C., Surgeon-General's Office, from Camp Dix, Major H. E. ROBERTSON, Minneapolis; Capt. A. B. MOORE, Rochester.

Mississippi

To Camp Knox, Ky., from Lake Charles, Capt. T. F. WORTHINGTON, Forte.
To Philadelphia, Pa., from Camp Gordon, Capt. T. P. BOSWELL, New Albany.

Missouri

To Camp Meade, Md., from Camp Dix, Major S. I. SCHWAB, St. Louis.
To Camp Sherman, Ohio, as tuberculosis examiner, from Camp Gordon, Lieut. M. O. COOMBS, Joplin.
To Camp Upton, N. Y., base hospital, from Camp Dix, Capt. J. F. HARDESTY, Winfield. *To examine the command* for cardiovascular diseases, from Lakewood, Lieut. H. A. ELKINS, Hardin.
To Fort Riley, from Plattsburg Barracks, Lieut. W. G. HOGAN, Neck City.
To Fort Rodman, Mass., from Camp Greene, Capt. D. WYATT, Mineola.
To Garden City, N. Y., from Camp Dix, Major A. W. McALESTER, Kansas City.
To Jefferson Barracks, Mo., from Northeastern Department, Lieut. S. B. BUCK, Anderson; from West Baden, Lieut. T. E. LILLY, Kansas City.
To Philadelphia, Pa., from Camp Zachary Taylor, Major E. G. MARK, Kansas City.
To Pittsburgh, Pa., from Camp Dodge, Lieut. G. W. GAINES, Rayville; Capt. W. T. HIRSCHI, St. Louis.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Jefferson Barracks*, from Camp Pike, Lieut. H. J. BLOUNT, Potosi.

Montana

To Biltmore, N. C., from Camp Meade, Lieut. G. A. LEWIS, Roundup.
To Camp Meade, Md., base hospital, from Army Medical School, Capt. A. G. FULLER, Missoula.

Nebraska

To Camp Dodge, Iowa, base hospital, from Fort Snelling, Lieut. R. L. IVINS, Crawford.
To Chicago, Ill., from Camp Grant, Capt. C. L. FAHNESTOCK, McCook.
To El Paso, Texas, from Camp Owen Bierne, Lieut. C. W. PARKS, Lincoln.
To Fort Sheridan, Ill., from Camp Custer, Capt. D. C. HILTON, Lincoln.
To Jefferson Barracks, Mo., from St. Louis, Capt. F. C. GENUNG, Wausa.
To Oteen, N. C., from Camp Joseph E. Johnston, Capt. J. F. ALLEN, Omaha.

New Hampshire

The following order has been revoked: *To Scituate, Mass.*, from Penniman, Va., Capt. W. P. CRAIG, Walpole.

New Jersey

To Colonia, N. J., from Camp Sherman, Lieut. H. B. EPSTEIN, Newark.
To Fort McHenry, Md., from Rochester, Capt. C. B. LUFBURROW, Plainfield.
To Hoboken, N. J., from Camp Dix, Capt. S. L. SALASIN, Atlantic City.
To Hot Springs, Ark., from Camp Dix, Col. R. M. CULLER.
To Washington, D. C., St. Elizabeth's Hospital, from Camp Gordon, Capt. D. E. WARREN, Passaic.
To Whipple Barracks, Aris., from San Antonio, Capt. W. H. HAINES, Audubon.

New Mexico

To Denver, Colo., from Fort Bayard, Lieut. A. D. LAZENBY.

New York

To Army Medical School, from Fort Oglethorpe, Capt. J. C. TEAS, Flushing. For instruction, Major R. R. FITCH, Rochester; from Camp Dix, Major W. W. PLUMMER, Buffalo.
To Camp Custer, Mich., from Camp Dix, Capt. B. A. HALL, Oxford.
To Camp Dix, N. J., to examine the troops for cardiovascular diseases, from Lakewood, Lieut. A. EBERLE, Brooklyn.
To Camp Grant, Ill., from Camp Dodge, Capt. T. A. ROGERS, Plattsburg.
To Camp Knox, Ky., from Camp Greene, Major R. B. BONTECCOU, Ithaca.
To Camp Meade, Md., base hospital, from Camp Lee, Lieut. F. E. DUBOIS, New York.
To Camp Pike, Ark., from Camp Bowie, Lieut. F. N. POTTS, Buffalo.
To Camp Sherman, Ohio, from Camp Gordon, Lieut. A. TOWBIN, New York.
To Camp Travis, Texas, from Fort Sam Houston, Lieut. A. RAVICH, Brooklyn.
To Camp Upton, N. Y., base hospital, from Camp Abraham Eustis, Lieut. H. C. DORSEY, New York.
To Camp Zachary Taylor, Ky., to examine the troops for cardiovascular diseases, from Lakewood, Lieut. A. C. HERRING, New York.
To Carlisle, Pa., from Lakewood, Lieut. F. W. BISHOP, New York.
To Colonia, N. J., from Camp Dix, Lieut. S. W. HAUSMAN, Ogdenburg; from Fort Oglethorpe, Lieut. J. G. HART, Rochester.
To Columbia Barracks, Ohio, from Denver, Capt. H. A. CRAIG, Staten Island.
To Eastview, N. Y., from Camp Devens, Lieut. V. A. NARDIELLO, New York.
To Fort McHenry, Md., from Mineola, Capt. J. M. WHEELER, New York.
To Fort Ontario, N. Y., from Camp Dodge, Capt. B. R. NAIRN, Buffalo.
To Fort Snelling, Minn., from Camp Dix, Major E. L. HANES, Rochester; from Camp Dodge, Lieut. B. M. KULLY, New York.
To Garden City, N. Y., from Camp Dix, Lieut. D. D. STOWELL, New York.
To Hoboken, N. J., from Camp Dix, Major W. D. ALSEVER, Syracuse; Capt. A. F. WRIGHT, Wayne; Lieut. J. J. KILCOURSE, Jamaica; from Washington, Capt. A. W. KLEIN, New York.
To Newport News, Va., from Fort Oglethorpe, Lieut. C. B. GIBSON, New York.
To Otisville, N. Y., from Syracuse, Lieut. B. R. KELLY, New York.
To Philadelphia, Pa., from Camp Gorden, Lieut. W. H. CONKLIN, New York; from Camp Wheeler, Capt. C. W. FIELD, New York.
To Plattsburg Barracks, N. Y., from Camp Joseph E. Johnston, Capt. L. A. WING, New York.
To report to the commanding general, Western Department, from Camp Fremont, Lieut. P. E. McCHESNEY, New York.
To Rockefeller Institute for instruction in the treatment of infected wounds, from Camp Greene, Lieut. C. W. DEMONG, Syracuse. On completion *to his proper station*, from Camp Devens, Lieut. L. A. WYLIE, Harrison.
To Syracuse, N. Y., from Camp McClellan, Lieut. L. L. SHAPIRO, New York.

To Walter Reed General Hospital, from Camp Meade, Lieut. H. E. WHEELOCK, Fredonia; from Fort Oglethorpe, Capt. G. V. JOHNSON, Schenectady.

To Washington, D. C., Col. H. H. M. LYLE, New York; from Camp Dix, Col. J. F. McKERNON, New York. Surgeon-General's Office, from Camp Dix, Lieut.-Cols. R. DERBY, W. J. ELSER, New York; from Plattsburg Barracks, Lieut.-Col. T. D. WOODSON.

To Williamsbridge, N. Y., from Camp Dix, Major L. G. COLE, New York.

The following order has been revoked: *To Boston, Mass.*, from Camp Crane, Lieut. G. G. DAVIS, Arcade.

North Carolina

To Camp Gordon, Ga., base hospital, Lieut.-Col. J. W. LONG, Greensboro.

To Camp Travis, Texas, as tuberculosis examiner, from Camp Logan, Lieut. W. T. LONG, Roxboro.

To East Potomac Barracks, D. C., from Camp Lee, Lieut. W. C. PETERSON, Wilmington.

To Markleton, Pa., from Camp Sheridan, Lieut. M. R. GIBSON, Raleigh.

To Oteen, N. C., from Washington, D. C., Lieut. W. C. PETERSON, Wilmington.

North Dakota

To Fort Keogh, Mont., from Camp Lewis, Capt. A. M. FISHER, Bismarck.

To Fort Snelling, Minn., from Fort Riley, Lieut. W. C. AYLEN, Mandan.

Ohio

To Army Medical School, from Camp Dix, Lieut. C. W. MAXSON, Steubenville.

To Camp Meade, Md., base hospital, from Camp Dix, Capt. N. L. ZINNER, Cleveland.

To Colonia, N. J., from Army Medical School, Capt. L. B. ZINTSMASTER, Massillon.

To Dallas, Texas, Love Field, from Austin, Lieut. F. S. VAN DYKE, Columbus.

To Fort Snelling, Minn., from Camp Dodge, Lieut. C. G. McPHERSON, Xenia.

To Hoboken, N. J., from Camp Dix, Lieut.-Col. C. R. CLARK, Youngstown.

To Philadelphia, Pa., from Camp Gordon, Lieut. A. H. BERR, Cleveland.

Oklahoma

To Army Medical School, from Camp Dix, Lieut. C. C. SHAW, McAlester.

To Fort Sam Houston, Texas, from Camp MacArthur, Lieuts. I. C. MORRIS, Cushing; P. C. CHRISTIAN, Oklahoma City.

To Hot Springs, Ark., from Camp Abraham Eustis, Major R. L. KURTZ, Nowata.

Oregon

To San Francisco, Calif., Letterman General Hospital, from Camp Dix, Major T. M. JOYCE, Portland; from Philadelphia, Lieut. A. O. WALLER, Eugene.

Pennsylvania

To Army Medical School, from Fort Oglethorpe, Lieut. C. W. WAKEFIELD, Pittsburgh.

To Camp A. A. Humphreys, Va., from Camp Jackson, Major A. E. DAVIS, Scranton.

To Camp Abraham Eustis, Va., from Camp Dix, Capt. W. J. DOYLE, Wilkes-Barre.

To Camp Dix, N. J., base hospital, from Fort Sheridan, Capt. S. J. REPPLIER, Philadelphia.

To Camp Jackson, S. C., from Camp Crane, Major F. R. SHUTE, Philadelphia.

To Camp Lee, Va., from Hampton, Va., Lieut. W. S. TAYLOR, Harrisburg.

To Camp Sherman, Ohio, base hospital, from Camp Dix, Major J. D. ELLIOTT, Philadelphia.

To Camp Zachary Taylor, Ky., base hospital, from Army Medical School, Capt. L. H. MAYER, Jr., Johnstown.

To Denver, Colo., from Fort Sill, Capt. H. O. MATTER, Pittsburgh.

To Fort Des Moines, Iowa, from Fort Oglethorpe, Lieut. W. C. CHANEY, Philadelphia.

To Fort McHenry, Md., from Boston, Lieut. E. H. THOMPSON, Philadelphia.

To Hoboken, N. J., from Camp Dix, Lieut.-Cols. W. H. WALSH, Philadelphia; J. D. HEARD, Pittsburgh; from Camp Meade, Lieut. G. W. A. HESS, Philadelphia; from Long Beach, Lieut. D. L. SIMON, Pittsburgh.

To Lakewood, N. J., from Camp Upton, Lieut. L. N. GAY, Shamokin; from Camp Zachary Taylor, Lieut. T. M. MABON, Pittsburgh.

To Philadelphia, Pa., from Camp Dix, Capt. J. E. ELLINGER, Philadelphia; from Camp Gordon, Capt. J. BEATTIE, Lebanon; from Fort McPherson, Lieut. W. C. ELY, Philadelphia.

To Pittsburgh, Pa., from Carlisle, Pa., Lieut. J. W. FISHER, Pittsburgh.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Majors H. W. CATTELL, Philadelphia; R. E. DAVISON, Pittsburgh.

Philippine Islands

To San Francisco, Calif., Capt. A. P. GOOFF, Manila; from Philippine Department, Major J. M. PRATT.

Rhode Island

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station*, from Camp Dix, Lieut. E. M. PORTER, Providence.

South Carolina

To Fort McPherson, Ga., from Fort Oglethorpe, Lieut. J. D. GUESS, Charleston.

To Lakewood, N. J., from Washington, Capt. T. C. GALLOWAY, Columbus.

Tennessee

To Camp Devens, Mass., base hospital, from Camp Hancock, Capt. R. L. SANDERS, Memphis.

To Camp Gordon, Ga., as tuberculosis examiner, from Camp Logan, Lieut. M. L. CONNELL, Nashville.

To Camp Upton, N. Y., from Camp Dix, Lieut. C. O. BAILEY, Memphis. Base hospital, from Camp Dix, Capt. J. W. MORRIS, Sommerville.

To Fort Logan H. Roots, Ark., from Camp Pike, Lieut. O. P. WALKER, Memphis.

To Montgomery, Ala., from Americus, Ga., Lieut. E. C. SEALE, Nashville.

To Oteen, N. C., from Camp Gordon, Capt. O. S. DEATHRIDGE, Nashville.

Texas

To Army Medical School for instruction, from Camp Dix, Major C. S. VENABLE, San Antonio.

To Camp Beauregard, La., from Fort Oglethorpe, Lieut. J. W. McKEE, Houston.

To Camp Kearney, Calif., to examine the command for cardiovascular diseases, from Camp Lewis, Lieut. R. L. ROSS, San Antonio.

To Camp Logan, Texas, base hospital, from Camp Upton, Lieut. R. A. THARP, Austin.

To Camp Meade, Md., base hospital, from Boston, Lieut. H. K. MORRISON, Houston. *To examine the troops* for cardiovascular diseases, from Fort Oglethorpe, Lieut. E. TOOMIN, Waco.

To Camp Travis, Texas, base hospital, from Camp Dix, Capt. H. M. BUSH, San Antonio.

To Fort Sam Houston, Texas, from Camp John Wise, Capt. C. F. HAYES, Fort Worth; from Camp MacArthur, Lieuts. W. J. MASTERS, Knox City; J. E. HAMMOND, Munday; H. A. WINTER, Port Arthur. Base hospital, from Camp Logan, Capt. A. S. LOVE, Ballinger.

To Jackson Barracks, La., from Camp Travis, Lieut. B. H. PALMER.

To Newport News, Va., from Camp Abraham Eustis, Capt. W. V. PRUETT, Brownsville.

Utah

To Fort Douglas, Utah, from Camp Lewis, Capt. C. M. BENEDICT, Salt Lake City; from Logan, Utah, Major W. CHRISTOPHERSON, Salt Lake City.

The following order has been revoked: *To Fort Des Moines, Iowa*, from Fort Riley, Lieut. F. F. HATCH, Salt Lake City.

Vermont

To Camp Upton, N. Y., from Detroit, Capt. N. J. DELEHANTY, Rutland.

To Newport News, Va., from Boston, Lieut. H. L. PIERCE, Swanton.

To Philadelphia, Pa., from Camp Dix, Lieut. R. L. MAYNARD, Burlington.

Virginia

To Newport News, Va., from Camp Bragg, Capt. C. T. PEIRCE, Litwalton.

To Philadelphia, Pa., from Camp Devens, Major H. FLETCHER, Fairfax.

Washington

To Camp A. A. Humphreys, Va., as camp sanitary inspector, from Fort Riley, Capt. W. H. AXTELL, Bellingham.

To Camp Lee, Va., from Fort Oglethorpe, Lieut. C. R. GLENN, Kelso.

To Fort Caswell, N. C., from Camp MacArthur, Capt. A. E. HENBY, Seattle.

To Garden City, N. Y., from Camp Dix, Major R. W. PERRY, Seattle.

To Hoboken, N. J., from Camp Dix, Capt. W. W. HARRINGTON, Spokane.

To San Francisco, Calif., from Vancouver Barracks, Major R. A. ALLEN, Tacoma; Capts. E. W. COX, Monroe; H. B. CLOUGH Tenasket.

Wisconsin

To Camp Dodge, Iowa, base hospital, from Fort Riley, Major W. T. CLARK, Fort Atkinson. *To examine the command* for cardiovascular diseases, from Lakewood, Lieut. B. F. KOCH, Wauwatosa.

To Camp Grant, Ill., from Camp Lewis, Lieut. L. M. PEARSON, Tomahawk; from Newport News, Va., Lieut. J. F. SCHNEIDER, Oshkosh.

To Fort Des Moines, Iowa, from Camp Upton, Lieut. A. YAFFE, Milwaukee.

To Fort Sam Houston, Texas, from San Antonio, Capt. C. H. MEST, Burlington.

To Fort Sheridan, from Camp Cody, Capt. C. O. DECKER, Crandon.

To Fort Snelling, Minn., from Fort Oglethorpe, Capt. R. W. JONES, Wausaw.

To Oteen, N. C., for instruction, from Camp Joseph E. Johnston, Capt. B. F. HOYT, South Kaukauna.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station*, from Camp Custer, Lieut. I. E. LEVITAS, Green Bay.

Wyoming

To Fort D. A. Russell, Wyo., from Camp Dodge, Capt. L. P. DESMOND, Cheyenne.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Asst. Surg.-General L. L. LUMSDEN, relieved from duty at St. Louis, Mo., and continued on present duty as chief of the division of Hygiene and Sanitation, Emergency Fleet Corporation, Philadelphia, Pa.

Senior Surg. G. M. MAGRUDER, relieved at Portland, Oregon, and Tacoma, Wash., proceed to Memphis, Tenn, for duty at the Marine Hospital.

Senior Surg. A. J. LANZA, relieved at Pittsburgh, Pa., continued on duty at Washington, D. C., in connection with the Division of Industrial Hygiene and Medicine.

Surgeon FRIENCH SIMPSON, orders to Fort Stanton revoked. Proceed to San Francisco Quarantine Station for duty.

Passed Asst. Surg. L. O. WELDON, relieved at Lawton, Okla., detailed for duty with the Division of Venereal Diseases, Washington, D. C.

Passed Asst. Surg. J. G. WILSON, proceed to Chicago, Ill., for duty on board of inspection of the Speedway Hospital.

Passed Asst. Surg. O. H. COX, relieved at Jacksonville, Fla., proceed to Pensacola, Fla., for duty in connection with extracantonment sanitation.

Asst. Surg. L. L. WILLIAMS, Jr., proceed to Wilmington, N. C., for conference on antimalarial measures.

Acting Asst. Surg. R. D. CLIPPINGER, proceed to Harrisburg, Pa., for duty in connection with influenza control.

Acting Asst. Surg. E. B. LIDDELL, proceed to Houston, Texas, for duty in clinic.

Acting Asst. Surg. E. W. SCOTT, proceed to Kansas City, Mo., for conference concerning influenza control.

Acting Asst. Surg. M. E. STEINBERG, proceed to Hansford, W. Va., to investigate outbreak of influenza.

Scient. Asst. M. B. HULL, proceed to New Haven, Conn., for intensive studies of industrial sanitation.

Scient. Asst. LLOYD R. JONES, relieved at Charlotte, N. C., proceed to Fayetteville, N. C., for duty in connection with extracantonment sanitation.

Scient. Asst. H. B. LARNER, proceed to Cullman, Alabama, for duty in outbreak of Smallpox.

Scient. Asst. JOHN B. WEBB, relieved at Waco, Texas, proceed to Portsmouth, Va., for duty in extracantonment sanitation.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALASKA

Irregular Practitioner Convicted.—A drugless healer by the name of A. M. Brevick of Ketchikan, it is reported, was arrested recently by the Board of Medical Examiners of Alaska and, January 27, pleaded guilty of practicing medicine without license, and was fined $50 and costs.

DISTRICT OF COLUMBIA

Personal.—Dr. Tom A. Williams, Washington, has returned from France after an absence of eighteen months, during which time he acted as medical adviser to the bureau of medical research of the American Red Cross.

ILLINOIS

Personal.—THE JOURNAL has received word of the arrival and active work of the American Red Cross Commission to Greece, at Athens, headed by Deputy Commissioner Major Carl E. Black.

Restoration of License Refused.—The Department of Registration and Education of the State of Illinois, February 1, gave a rehearing to Dr. Frank J. Oshay, Ladd, whose license to practice medicine and surgery in Illinois was revoked, Dec. 9, 1918; but after rehearing confirmed its previous action.

Medical Examiners Reappointed.—Mr. Francis W. Shepardson, director of the Department of Registration and Education, has reappointed, as the medical examining committee for 1919, Drs. John A. Robinson, William L. Noble and Guy M. Cushing, Chicago; Dr. Lewis C. Taylor, Springfield, and Dr. Jonathan L. Wiggins, East St. Louis.

Chicago

Institute of Medicine Meeting.—The Institute of Medicine of Chicago will have a symposium on influenza, February 21, at the City Club, at 8 o'clock. The subjects announced are: "Epidemiology," Prof. E. O. Jordan; "Bacteriology," Dr. David J. Davis; "Pathologic Anatomy," Dr. Edwin R. LeCount; "In Military Camps," Dr. Walter W. Hamburger; "Clinical," Dr. Solomon Strouse, and "Public Health," Dr. Heman Spalding.

Personal.—Dr. Joseph C. Beck, who has been in the charge of the Czecho-Slovac Hospital at Convak, France, has been transferred to Prague, Bohemia, where he is working in reconstructive and plastic surgery of the head and neck. ——John G. O'Malley, Capt., M. C., U. S. Army, has returned after more than three years service abroad, first with the Royal Army Medical Corps, and later in the Medical Corps, U. S. Army.——George C. Tallerday, Capt., M. C., U. S. Army, who has been with the American Army of Occupation in Coblenz, has returned from abroad.

INDIANA

Communicable Diseases.—It is reported that there are now twenty-three cases of smallpox in Elkhart, and the situation is showing no improvement.——Diphtheria is reported to be prevalent in Columbia City.

Personal.—Dr. Zera M. Beaman, for several years secretary of the board of health of North Manchester, has resigned. ——Dr. Lyman K. Gould has been appointed consulting surgeon to the Wabash Railroad at Fort Wayne, to succeed Dr. Edward J. McOscar, deceased.——Dr. John W. Bilderback has been appointed health officer of New Haven.

IOWA

Personal.—Dr. George E. Decker, Davenport, has been elected a director of the Davenport Commercial Club.

Hospital Notes.—The new Children's Hospital, which is being constructed in Iowa City at a cost of $150,000, is nearing completion. This building will be given over entirely to the care of crippled children.——The State Hospital for Epileptics, Woodward, was recently dedicated with Governor Harding and State Red Cross Director Kepford as principal speakers.

KANSAS

Appropriation Asked.—The state board of administration has been asked for an appropriation of $200,000 for a medical school at Rosedale.

Personal.—Dr. James S. Rushton, Morrill, was operated on recently for appendicitis in a base hospital at Kelly Field, San Antonio, Texas, and is reported to be doing well.

Memorial Hospital Suggested.—As a tribute to the memory of Dr. William Thomas Fitzsimmons, the first American medical officer to be killed during the war, the Kansas State Medical Society proposes to enlarge the Bell Hospital, Rosedale, and rechristen it the Fitzsimmons Memorial Hospital.

MARYLAND

Personal.—Seven Baltimore physicians and surgeons who have been overseas as members of the Johns Hopkins and the University Hospital units arrived in New York, February 1. All were ordered to report at Camp Dix, N. Y., where they will be held pending further orders. The officers are: Majors Walter A. Baetjer, George J. Heuer, Charles Bagley, Jr., Cary B. Gamble, Jr., Capt. William H. Smith and Lieuts. Henry Shaw and R. G. Coblentz.

Convention of Health Boards.—Ways and means of protecting the public health and building up a stronger generation were discussed at a convention of the health boards of Maryland, called by the state board of health, and held at the Medical and Chirurgical Faculty Building, Baltimore, February 14 and 15. Dr. John A. Farrell of the International Health Board, and director of its work in the United States, delivered a lecture at the opening session on "The Organization of Public Health Work in the Counties." The lecture was preceded by papers by the chiefs of divisions of the state department of health giving accounts of the organizations: bacteriology, Dr. William Royal Stokes; vital statistics, Dr. Frederick V. Beitler; sanitary engineering, Robert B. Morse; chemistry, Dr. Wyatt W. Randall; food and drugs, Dr. F. C. Blanck, and communicable diseases, Dr. C. Hampson Jones. Tuberculosis was a most important subject under discussion at the afternoon session and W. H. Sawyer, Major, Medical Corps, U. S. Army, discussed prevention and control of social diseases, and was followed by Dr. Allan W. Freeman, health officer of Ohio, who spoke on "Local Public Health Administration in the States." The School of Hygiene at the Johns Hopkins University was also visited. At the evening session Dr. William H. Welch, president of the state board of health and director of the Johns Hopkins School of Hygiene, addressed the conference, and was followed by Allan J. McLaughlin, assistant surgeon-general, U. S. P. H. S., who delivered an address on "Public Health Administration and Organization."

NEW JERSEY

Health Officials Elect Officers.—At the annual conference of New Jersey Health Officials held in Trenton, January 25, Henry V. Ammerman, Kearny, was elected president, Dr. Talbot Reed, Atlantic City, vice president, and R. Chandler, Plainfield, was reelected secretary and treasurer.

NEW YORK

Bill to Legitimatize War Babies.—A bill introduced into the New York Legislature, February 4, by Mrs. Mary M. Lilly, representing the Seventh Assembly District of Manhattan, and advocated by Judge Robert J. Wilkin of the Children's Court of New York City, provides for the legitimatization of so-called war babies, which, according to reports, are

more numerous than is imagined. The bill provides that the identity of the father must be established in a court of law, and is so framed that designing women cannot resort to the law for purposes of blackmail.

Physicians for Rural Communities.—The state department of health asserts that many rural communities in New York state have been without physicians because of death, permanent military appointments or other causes. As a result of letters received from a number of such communities, the state department of health has undertaken to put the authorities in such places in touch with physicians desiring rural locations. This has been accomplished by advertisements in the medical journals and newspaper publicity. Replies have been received from ninety-six physicians located in twenty different states, and names have been sent to twenty-four communities.

New York City

Deaths from Violence.—Approximately 5,200 persons met violent deaths in New York City during 1918, according to the annual report of the chief medical examiner (coroner). Of these 772 were suicide, 273 were homicide. A slight dcrease as compared with 1917.

Personal.—Dr. S. Dana Hubbard has been placed temporarily in charge of the division of industrial hygiene by the health commissioner.——Alexis Carrel, Major, M. C., U. S. Army, who has been serving with the French army in the Montdidier section, returned on the Transatlantique steamer *La Lorraine*, January 28, and began to resume his work at the Rockefeller institution for medical research.

The Health Department and the Drug Evil.—In addressing the Federation of Women's Clubs, February 7, Health Commissioner Dr. Royal S. Copeland stated that there are at present 200,000 drug addicts in the city of New York and that there are 2,600 retail drug stores. One drug store sold 585 ounces of narcotics in December. Dr. Copeland states that the health department is going to establish drug stations and check up narcotic sales.

Maternity Center Association Meets.—At the annual meeting of this organization, held recently, it was announced that the association had established twenty-two clinics and had at present 7,400 expectant mothers under its care. Dr. Henry Dwight Chapin, in an address before the association, stated that 700 women died in childbirth in this city last year. The association adopted resolutions endorsing the health insurance bill now before the legislature.

Motor Fatalities Break Record.—The report of the National Highways Protective Society for the month of January shows that forty-nine persons were killed by automobiles in New York City during the month, eight were killed by surface cars, and one by a wagon, making fifty-eight in all, which is the highest number of fatalities yet recorded for the month of January. The figures for the year 1918 show an increase of fatalities from automobiles of 30 per cent. over 1917, with 1,189 killed, as against 837 for 1917. Basing the value of a human life on the estimate of the federal government, which insures a soldier's life at $10,000, the economic loss represented by these accidental deaths is $11,890,000.

Medical Examiner Versus Coroner.—The annual report of the chief medical examiner, Dr. Charles Norris, for the first year of his office which succeeded that of the coroners' system has just been made public. It amply demonstrates the advantages of this system over the old coroners' system. The report shows that, whereas the budget for the year of the coroners' system (1917) was $158,000, that for the medical examiner for the first year was $92,000, the latter sum including laboratory work of the greatest value. The report reveals that the number of homicides during 1918 was 273, against 283 in 1917. There was an increase of more than fifty in deaths from accidental poisoning. In all probability this is due to the more scientific examination to determine the cause of death. The report discloses that the method of suicide most frequently used is by illuminating gas, 311 persons in the greater city having chosen that method during the past year. The second in frequency on the suicide list was jumping from a building, 119 having sought death in this way. Shooting was the means of self-inflicted death in ninety-two instances and hanging in eighty-eight. Of 125 accidental deaths, forty were due to morphin, heroin, opium and cocain. There were in all 526 accidental deaths due to illuminating gas, an increase of twenty-five over the previous years. The medical examiner's office has under consideration recommendations for having commercial poisons, such as those for the extermination of rats and insects, put up in packages that show their deadly nature, since many persons died during the year because they mistakenly took what they thought was medicine from packages containing pure poison.

OHIO

Cleveland Physicians Prosecuted.—The Ohio State Medical Board reports that Dr. John L. Hoyer of Cleveland, whose license was revoked in 1899 for felony, was recently convicted in the police court and sentenced to thirty days in jail for the illegal practice of medicine.——Dr. Jay Boyd is under arrest for illegal practice. Dr. Boyd's Ohio license was revoked, July, 1899, because of extravagant advertising. ——Dr. George C. Halliday, claiming to be a graduate of Harvard, was arrested for the illegal practice of medicine and was released on the bond of $1,000. He has left the state, forfeiting his bond.

Licenses Revoked.—At its meeting, January 29, the Ohio State Medical Board revoked the license of Dr. Levi White Hunt of Toledo for alleged extravagant advertising having a tendency to deceive and defraud the public. Dr. Hunt has appealed the case to the Common Pleas Court.——At a special meeting, January 21, the board revoked the license of William H. Stukenholt of Cleveland for having association with and lending his name to an illegal practitioner of medicine.—— January 21, the board also revoked the license of Herbert E. Edwards of Cleveland. Dr. Edwards had previously been convicted in the federal court for misbranding pharmaceutical preparations and had been sentenced for eighteen months in the federal prison at Atlanta. This decision was but recently confirmed by the supreme court.——The license of Charles B. Weedman of Cleveland was also revoked, January 21, for gross immorality—conviction of the illegal sale of narcotics—and lending his name or having connection with an illegal practitioner of medicine. The evidence showed Dr. Weedman had received $40 per week from the "United Doctors" which investigation showed was owned by Dr. John P. Furno, Detroit, who was not licensed to practice in Ohio.

PENNSYLVANIA

Philadelphia

Women's Hospital Drive.—The women campaigners who are seeking to raise $75,000 for the West Philadelphia Hospital for Women had only $15,000 to gain to reach their goal on February 8, the last day of the campaign.

Personal.—Dr. Richard P. Smith has been named assistant medical inspector of the board of health.——Dr. Mulford K. Fisher, who was taken ill with croupous pneumonia while attending the convention of roentgenologists at Atlantic City, N. J., is now convalescent.

Friends Plan Hospital.—A hospital under the Society of Friends, provided for in the will of the Jeans who died twelve years ago, may soon be built as there is $2,000,000 available for this purpose. The proposed hospital will be for the treatment of cancerous and nervous diseases and will be located within 20 miles of Philadelphia.

Medical Inspectors Resign.—Forty medical inspectors of the public schools resigned in a body, February 7, resignation to become effective March 1, because they are unwilling to longer work for $600 a year. The director of health and charities has asked the inspectors to delay action pending action by the board, but since they had resigned he could do nothing else but appoint others in their places.

College of Physicians.—At the stated meeting of the College of Physicians of Philadelphia, held February 5, the scientific portion of the meeting was devoted to papers on "Concussions and Injuries of the Eye and Warfare," by Dr. George E. deSchweinitz; "Reeducation of the Blind," by James Bordley, Jr., Lieut.-Col., M. C., U. S. Army; "Research Work on the Problems of Aviation," by Walter B. Lancaster, Major, M. C., U. S. Army, and the "Army School of Ophthalmology," by Meyer Wiener, Major, M. C., U. S. Army.

Officers Elected.—At the stated meeting of the Obstetrical Society of Philadelphia, held at the College of Physicians, February 16, the following officers were elected: president, F. Hurst Maier; vice presidents, Stephen E. Tracy and Alfred Heineberg; secretary, Edward A. Schumann; secretary pro tem, Charles S. Barnes, and treasurer, William E. Parke. ——The Philadelphia Clinical Association, February 3, elected the following officers: president, William Duffield Robinson; vice president, Edward J. Moore; secretary, Charles S. Barnes, and treasurer, William McKeage.

CANADA

Influenza.—With thirty deaths reported to date, the number of new cases of influenza in the province of Quebec in 100 of the 2,500 municipalities, is put down at 2,000. Dr. Elzear Pelletier, provincial officer of health of Quebec, states that the present is a mild epidemic compared with that of last fall. The schools which escaped the epidemic last fall seem now to be suffering more. The first epidemic in 1918 caused 13,880 deaths, and 530,700 cases of the influenza.

Disciplinary Power Asked.—The Ontario Medical Council will seek power from the Ontario legislature to discipline its members when such action is necessary in connection with breaches of the Ontario Temperance Act. During the last few months there have been several convictions of doctors for violations of the Ontario Temperance Act; and the executives of the council have felt these members should be dealt with, but doubt as to the authority of the council prevented action.

Municipalities to Be Liable.—The liberal caucus of the Quebec legislative body discussed recently the contributions by municipalities to hospitals and other institutions for patients from their districts treated in the hospitals of Montreal and other big cities of the province. As a result a bill will be introduced in the legislature which will make those municipalities liable for a portion of the cost of treatment, in the same manner as they now pay for the maintenance and treatment of patients in the hospitals for the insane in that province.

Osteopaths in Quebec.—The osteopaths have a bill before the Quebec legislature. Dr. A. Edmond Burrows, Montreal, has a letter in the public press stating that the bill is a challenge to the educative system of Canadian universities. He claims that the opposition to the bill from physicians and surgeons is in order to protect the welfare of the people, and to maintain the high standard of the medical profession in Canada. In his opinion any trained masseur or masseuse is capable of administering the treatment termed "osteopathic," but it requires a trained physician to prescribe when such treatment is beneficial or when it would be harmful. The passing of such a law would open a back door for the admittance into the medical profession of unqualified persons.

Personal.—Capt. Robert D. Moyle of the Second Field Ambulance of the C. A. M. C. has been awarded the Military Cross "for conspicuous courage and devotion to duty." He is a graduate in arts of McMaster University, Toronto, and of Johns Hopkins University in medicine.——Dr. Robert J. Manion, M.P., Fort William, Ont., will second the address in reply to the speech from the throne in the Canadian House of Commons when the session opens, February 20.——Dr. L. de Lotbiniere, Montreal, was the guest of honor at a banquet held in that city, February 5. There were 200 French and English citizens present, including many medical men. The occasion was the appointment of Dr. Lotbiniere to the deanship of the Medical Faculty of Laval University, in succession to the late Dr. Emmanuel P. Lachapelle. Dr. Rodolphe Boulet, Montreal, was in the chair.

Social Hygiene Laws for Canada.—During the week ended February 8, a conference was held at Ottawa, called at the instance of Sir Thomas White, the acting prime minister of Canada, to consider laws for the prevention and treatment of the venereal diseases in Canada. Among others present were Major-Gen. John T. Fotheringham, C.M.G., Ottawa; Dr. J. Alexander Hutchison, Montreal, president of the Canadian Public Health Association; Dr. Maurice M. Seymour, chief officer of health of Regina, Saskatchewan; Dr. Gordon Bell, health officer of Winnipeg, Manit.; Col. John W. S. McCullough, Toronto, and Dr. George G. Melvin, medical officer of health, New Brunswick. A department of health for the dominion; compulsory notification and compulsory treatment of the venereal diseases in every province; penalties for evading the laws; prevention of quack advertising, treatment and medicines; cancellation of the monopoly in the special products for syphilis, and the granting of permission to conduct such manufacture under the special supervision of the board of health of each province, and the rendering of financial assistance by the dominion government to the provinces in fighting the venereal diseases, were the chief topics of discussion.

GENERAL

Public Health Service Appeals to Physicians for Cooperation in Fight Against Venereal Diseases.—Physicians are receiving notices from the public health service relative to the prevention and treatment of venereal disease. In order to secure cooperation from the medical profession those interested are asked to return a postal card on which they give assurance of cooperation in reporting such cases, securing prompt treatment for them and in distributing literature relative to the spread of venereal infection.

Hope for Blind.—"Victory Over Blindness" was the title of an address by Sir Arthur Pearson, the blind founder and director of St. Dunstan's Hotel for Blinded Soldiers, London, England, before a mass meeting at the Century Theater in New York City, February 4. Sir Arthur described his work in restoring blinded British soldiers to self-support. Lieut.-Col. James Bordley, Baltimore, in charge of work for blinded American soldiers and sailors and director of the Red Cross Institute for the Blind, told of the work being done at Evergreen, Baltimore, for men of the American Expeditionary Force who lost their sight in action. The meeting was presided over by Douglas C. McMurtrie, director of the Red Cross Institute for Crippled and Disabled Men, under the auspices of which organization the meeting was held.

Opportunities for Trained Sanitarians.—The threatened recurrence of influenza next year is causing many communities to consider the installation of well organized health departments. In the past, difficulty has been experienced in obtaining men well trained in medicine, epidemiologists, vital statistics, water supply, sewage disposal, and in every branch of city positions. There are now returning to the civil communities men who have served in the Medical Corps of the Army, who are excellently equipped for positions as health officers, laboratorians, vital statisticians, sanitary engineers, industrial hygienists, school medical inspectors, and the like. The American Public Health Association has established a health employment bureau at Boston to supply men for such positions. When they return from service they will register with the bureau, and when a request for help comes to the bureau, they will be notified and will be sent to the prospective employers. This service is rendered without pay either to the employers or applicants.

Bequests and Donations.—The following bequests and donations have recently been announced:

United Charities of Chicago, $25,000; Country Home for Convalescent Children, $7,000; Children's Memorial Hospital, Visiting Nurse Association, and Grant Hospital, each $5,000; as a nucleus for a fund to be established for a home for crippled soldiers and sailors, $100,000 by the will of Mrs. Augusta Lehmann.

Philadelphia Hospital for Cripples, $10,000, and one half of the principal of the $10,000 trust fund after the death of the niece of testatrix and payment of other bequests: Hahnemann Hospital, Philadelphia, $5,000 by the will of Mrs. Frances W. Thorpe.

Jewish Hospital Association, Philadelphia, $1,000 by the will of Walter E. Steppacher.

For the proposed memorial hospital at Albion, Mich., a pledge of $2,500 by Dr. Albert B. Grant, Albion.

Johns Hopkins Hospital, $3,500 to be known as the Dr. John Dixon Fund, the income to be used in promoting the comfort and welfare of the hospital nurse, and Presbyterian Eye, Ear, Nose and Throat Hospital, Baltimore, $1,500 as a tribute to the memory of Dr. John Dixon, by the will of Mrs. Ada B. B. Dixon.

Yale University Medical School, New Haven, Conn., a donation of a fund of $80,000 to be known as the physiologic laboratory building fund, to be used ultimately for the construction of a physiologic laboratory and pending this the income to be used for the benefit of the department of physiology of the Yale University, Department of Medicine, by Mr. and Mrs. Howard H. Spaulding, Jr., Chicago, who gave $50,000; Mr. Benjamin H. Throop, who gave $25,000, and Mr. J. Ogden Armour, Chicago, who donated $5,000.

Hebrew Maternity Hospital, Montreal, Que., $28,905, in the first four days of the campaign for $50,000.

FOREIGN

Hospitable Offer of University of Bordeaux.—The authorities of the University of Bordeaux have announced that American physicians who request it will be admitted to graduate medical courses. Also that a certain number of American students will be admitted to the courses and laboratory privileges of the university. The university also expressed its desire for an interchange of professors.

Health Conditions in Germany.—The Associated Press publishes an interview with Lieut.-Col. Seale Harris, M. R. C., Birmingham, Ala., concerning a recent visit to Germany east of the Rhine. It is stated that the German nation is bankrupt and the people starving, the bread and food very poor and limited in quantity. Colonel Harris reports that tuberculosis is increasing and skin diseases due to lack of nourishment and the lack of soap are prevalent.

Typhus Fever.—A report from Persia states that famine and an epidemic of typhus fever exist at Tabriz, and that Gordon Paddock, American Consul at Tabriz, has appointed

a relief committee to take charge of the situation.——An epidemic of typhus fever has broken out in many Russian cities. It is reported that twelve physicians and forty nurses have died in Petrograd, and that the disease is raging in Kiev and Kovel and also is prevalent among the Lithuanian soldiers.

Infant Mortality in Spain.—The *Archives de Médecine des Enfants*, Paris, relates that Dr. M. Vargas, professor of pediatrics and dean at the University of Barcelona, founded in his native town, Barbastro, with 7,000 inhabitants, an infant consultation and dispensary and milk station, or, as he called it, the Instituto Nipiologico. A Child Welfare Week was recently celebrated there, at which it was announced that the infant death rate had been reduced by 50 per cent. during the three years since the institution was founded. Dr. Vargas is director of the Spanish children's journal, the *Medicina de los Niños*, and was the leader of the delegation of Spanish physicians who recently visited France and were invited to lecture at the Faculté de médecine. The topics of the lectures delivered were "Rachitis," "Antityphoid Vaccination," and "Influenza in Spain."

Death of Spanish Physicians Visiting Prison Camps in Germany.—The *Siglo Medico* of January 4 publishes a communication from the government to the effect that according to notices received from the Spanish embassy at Berlin, all of the Spanish physicians who have been visiting the prison camps have been attacked with influenza. The strain of the continuous journeying under unfavorable conditions and the privations in food readily explain the spread of the disease, which is common in the camps, to the visitors. One of the party, Dr. F. Perez Garcia, did not wait for his complete recovery from a light attack of influenza acquired at the Hannover camp, but started out to visit the other camps. He was obliged to return after visiting the camp at Minden where he acquired a pulmonary infection to which he succumbed in six days. The other physician of the party, Dr. Valderrama, of the naval medical corps, also died after arriving in Switzerland, in consequence of influenza acquired in the course of his official trip of inspection.

Brazilian Hospital in France.—The *Paris Médical* relates that Dr. Mourier, the undersecretary of state for the army medical department, recently visited the Brazilian hospital organized in France by Dr. N. de Gouvea, chief of the Brazilian medical mission to France. Dr. Mourier was accompanied by the inspector general, Dr. Février, and the latter presented the cross of the Légion d'honneur to Dr. P. de Rico Branco, an eminent surgeon from Brazil who volunteered in August, 1914, for service in France and has been at work there constantly since. Dr. Mourier in the name of the French government expressed the gratitude of the French to the Brazilian government for its generous initiative and to the members of the mission who came to help the wounded. The mission is said by the *Annaes Paulistas* to consist of fifty physician surgeons, besides a body of students and soldiers to guard the hospital in the field of operations. The mission is under the orders of the chief command of the Brazilian military service. The hospital was to be equipped for 500 beds. There was quite a large party from S. Paulo in the mission, led by Dr. B. Montenegro, recently appointed lieutenant-colonel, and member of the editorial staff of the *Annaes Paulistas de Medicina e Cirurgia.*

CORRECTION

Michigan News.—In THE JOURNAL for January 25, it was stated under "Michigan News" that Dr. James W. Inches had been made police surgeon of Detroit. This was an error, as Dr. Inches is now commissioner of police. It was also stated that $5,000 had been requested for a new department of health building. The sum requested was $500,000.

SOUTH AND CENTRAL AMERICA, MEXICO AND WEST INDIES

Deaths in the Profession.—Dr. **Ricardo S. Gomez,** professor of anatomy at the University of Buenos Aires and chief of the women's department of the Hospital Alvear.—— Dr. **Elias Toro,** professor of external pathology at Caracas and director of the newly founded school of pharmacy.

Reciprocity Between Mexico and Japan.—We understand from the *Revista Medica* of recent date that a treaty has been concluded between Mexico and Japan to the effect that the credentials and titles necessary for the practice of medicine in either country will be accepted in the other. It is stated that this is the only reciprocity treaty in respect to the liberal professions into which Mexico has entered as yet.

Child Welfare Congress Postponed.—The second Congreso Americano del Niño, which was to have been held at Montevideo in December, was postponed till May, 1920, on account of the problems arising from the termination of the world war and the prevailing epidemic of influenza. These rendered it impossible for the government or the profession to give this important international gathering the attention it deserved.

MEXICO LETTER

MEXICO CITY, Feb. 2, 1919.

Echoes of the Typhus Congress

Besides the communications presented to this congress mentioned in my last letter, should be noted one presented by Dr. F. Ocaranza who, aided by Dr. J. J. Izquierdo, has been studying the behavior of the leukocytes in tabardillo, making 162 examinations of blood from nineteen typhus patients. They found constantly a polynuclear leukocytosis with hypolymphocytosis and aneosinophilia. The fever curve parallels the leukocytosis; any divergence between them is a sign of grave prognosis. Dr. Izquierdo has also studied alone the retention and elimination of chlorids in th ecourse of typhus. He reported that the chlorid content of the blood in twelve typhus patients was constantly normal. Hence he condemned the practice of saline infusion in typhus, as liable to expose the patients to the danger of edema. Dr. F. Bulman read a paper on the relations between pregnancy and tabardillo.

Smallpox

This terrible disease which unfortunately never disappears completely from our country, has appeared in the frontier state of Sonora, and in Hermosillo, the capital, there have been a number of cases. It is expected that the disease will not spread, as active measures against it have been undertaken.

Still the Influenza Epidemic

News has been received that epidemic influenza has reached Santa Rosalia in lower California, but the death rate from it has not been high.

The Agricultural College

The School of Agriculture which has been closed for some time is to open anew, Feb. 5, 1919. Its course of studies include veterinary medicine besides the courses of agriculture and agronomic engineering.

Anticruelty to Animals Societies

Societies for this purpose are being founded among the children in the schools in order to train them in consideration for animals.

Baby Show

A local newspaper, in order to stimulate breast nursing as a means to improve the race and dam the flood of infant deaths, has founded a gallery of robust breast fed infants less than 1 year old. The picture of the infants are published.

BUENOS AIRES LETTER

BUENOS AIRES, Dec. 29, 1918.

Sanitary Inspection Against Influenza

The disappearance of influenza at Buenos Aires and at Montevideo since the third week in November has rendered unnecessary the measures adopted by mutual agreement between the Departamento de Higiene of Argentina and that of Uruguay to check the spread of influenza. December 2, the medical examination that was enforced at the port of Buenos Aires from 7 a. m. to 10 p. m. was suppressed, and December 15 all prophylactic measures were dropped. However, the sanitary inspection was still maintained for travelers to and from the ports of Uruguay and Paraná as epidemics were known to be still prevailing in some of them. As these disappeared, all sanitary inspection was abandoned December 26.

Public Health Service in Catamarca

The recent epidemic of dysentery in the province of Catamarca rendered evident the lack of measures to combat disease in that region. The Departamento Nacional de Higiene now has installed a branch station there, and Dr. Otero has been placed in charge.

Dysentery at Humahuaca

When the epidemic of exanthematous typhus died out in the province of Jujuy, it was followed by an epidemic of

dysentery. The provincial government has appealed for help to the national public health authorities.

Regional Arsenic Poisoning

Later investigations have rendered it evident that the zone in the province of Cordoba where chronic arsenical poisoning prevails is quite extensive. Clinical cases have been encountered and the presence of arsenic determined in a zone which commences to the south of Bell Ville and extends to north of San Francisco, the waters of the Tercero river being found to contain arsenic. Drs. F. Reichert and R. Wernicke have been studying how to purify these waters, and have succeeded in obtaining the precipitation of nearly all the arsenic and the vanadium by addition of colloidal iron hydroxid. Identical results can be obtained by adding simply salts of iron, as the waters are alkaline. The city of Bell Ville has begun tests of this procedure on a large scale, in order to decide definitely its practical importance.

Reorganization of Public Health System

Many years' experience has amply established the notorious inconveniences resulting from the continual changes in the chief officers of the Departamento de Higiene Nacional and of the Asistencia Publica of the capital. Each new chief usually makes sweeping changes in the personnel, which practice prevents obtaining competent and experienced employees. Most of the appointments are made for political reasons. The present president of the Departamento de Higiene, Dr. Capurro, has announced that he is going to reorganize the service once more. He has declared that he will soon drop eighty supernumerary employees.

University Notes

The regulation providing for an entrance examination for the Facultad de Medicina is now being combated, a petition having been presented to suppress it entirely or at least for this year. The university authorities have refused to make any concessions. The first year students have refused to take any examination in botany, and are clamoring for the suppression of this branch of study.

The Consejo of the Facultad have sent to the federal government, for appointment to the chair of clinical pediatrics, the names of Dr. M. Acuña, first choice; Dr. M. Santos, second choice, and Dr. J. Sixto, third choice. For the chair of gynecology, Dr. J. Molinari, first; Dr. J. Salvador, second, and Dr. C. Piccardo, third choice.

LONDON LETTER

LONDON, Jan. 22, 1919.

Medical Demobilization

The question of medical demobilization has been referred to in previous letters. An elaborate scheme has now been drawn up intended to apply on personal and professional grounds to all medical officers serving temporarily with the forces. As soon as provision has been made for areas in which the medical service has been dangerously depleted, it is proposed that the demobilization of medical officers shall proceed along lines which take into account: (*a*) length of service; (*b*) age; (*c*) special personal hardships in connection with practices, and (*d*) family responsibilities. For this purpose the names of those over the age of 30, Nov. 11, 1918 (the date of the armistice), will be classified in the following groups: (1) those who were mobilized at the outbreak of war; (2) those who have served more than three years; (3) those who have served between two and three years; (4) those who have served between one and two years, and (5) those who have served less than one year. Each group will be divided into four subgroups arranged according to age. Priority of demobilization will be determined according to "points," thus awarded according to length of service and age:

(*a*) Men mobilized at the outbreak of the war: over 45, 30 points; between 40 and 45, 29 points; between 35 and 40, 28 points; between 30 and 35, 27 points.

(*b*) Men with more than three years' service: over 45, 26 points; between 40 and 45, 25 points; between 35 and 40, 24 points; between 30 and 35, 23 points.

(*c*) Men with more than two years' service: over 45, 22 points; between 40 and 45, 21 points; between 35 and 40, 20 points; between 30 and 35, 19 points.

(*d*) Men with one year's service: over 45, 18 points; between 40 and 45, 17 points; between 35 and 40, 16 points; between 30 and 35, 15 points.

(*e*) Men with less than one year's service: over 45, 14 points; between 40 and 45, 13 points; between 35 and 40, 12 points; between 30 and 35, 11 points.

Points will be thus added or subtracted in respect of the modifying conditions named:

1. If in whole-time salaried post, subtract 6 points.
2. If with no paid appointment or national health insurance work, add 3 points.
3. If in single-handed practice, add 3 points.
4. If all members of partnership are on service, and no member of the partnership is otherwise entitled to more than 30 points, add in case of one partner 4 points.
5. If married, add 4 points.
6. If with children or other dependents add 1 point for each dependent (excluding wife) up to a maximum of 4 points.

Additional points may be awarded in respect of financial or other circumstances of an exceptional character which justify a claim to a higher order of priority than that determined by the foregoing provisions. The order of priority of men under 30 will be according to age, the older before the younger.

Medical Members in the New Parliament

The result of the general election as regards the medical candidates is not very satisfactory. Members of the profession were candidates in thirty-two constituencies, but only nine were returned. This, however, is an increase on the number (five) in the last parliament. Among the successful candidates are Dr. Christopher Addison (minister of reconstruction in the last parliament) and Sir Auckland Geddes (minister of national service), whose careers were described in THE JOURNAL, Dec. 21, 1918, p. 2090; Sir Watson Cheyne and Sir William Whitla (professor of materia medica, Belfast University), and Sir Robert Woods (professor of laryngology and otology, Trinity College, Dublin). Excepting Sir Auckland Geddes and Dr. Addison, all these eminent members of the profession were returned for university seats. One leading man, Sir Wilmot Herringham, physician to St. Bartholomew's Hospital and major-general in the Army Medical Service, was a defeated candidate for the London University. In Ireland three physicians were returned, in all cases Sinn Feiners (Republicans). All the medical candidates came forward on general political grounds; and only in the cases of the universities, in which there is a considerable medical vote, do they represent medical opinion in any special sense.

The Harvard Unit in London

The executive committee of the interallied fellowship of medicine (described in these columns, January 25) entertained at dinner the members of the Harvard Surgical Unit, which is paying a short visit to London on its way home from France. Sir William Osler, chairman of the executive committee, presided. The toast of the Harvard Unit was proposed by Dr. Norman Moore, president of the Royal College of Physicians. Lieut.-Col. Hugh Cabot, in responding, said that the unit was the outcome of a grave decision and one that gave general satisfaction at a time when there was an endeavor to maintain the neutrality of the United States. Throughout the first year or more of the life of the unit it was a succession of changes. The original conception was that it should be started by Harvard and followed in succession by other universities. It was not until December, 1916, that the corporation of the university undertook the enlistment of officers for the duration of the war, and that the unit came to stand on a firm foundation. It was only since he had been closely associated with Englishmen, Irishmen, Scotsmen and Australians that he had come really to know that we were, in fact, all of the same blood. Superficial differences tended to hold them apart, unless they realized that these difficulties were superficial. These superficial differences were largely mannerisms and methods of expression. He had been impressed by the fact that when Americans and British worked together they came to admire and understand each other's qualities. He felt very strongly that they must continue not simply to associate together but to bring these peoples together until they had finally locked them in a union which, as he believed, could alone be expected to maintain the peace of the world. He could not follow the eminent thinkers who believed in the League of Nations. The only league of nations in which he could really believe was a true union and understanding between all the branches of the Anglo-Saxon people. He was satisfied that that would be a basis on which might be constructed a league of nations that would do something to maintain the peace of the world.

Lieut.-Col. E. F. Harrison, C.M.G.

Lieut.-Col. E. F. Harrison, to whose investigations the success of the British defense against the poisonous gases of the Germans was mainly due, has died from influenza at the

age of 49. His premature end was largely due to being worn out by his labors. Before the war he was one of the leading scientific pharmacists in England. He was a member of the board of examiners of the Pharmaceutical Society and for a time head of the analytic department of Burroughs Wellcome & Co. He performed for the *British Medical Journal* a series of analyses of proprietary articles which were published under the title "Secret Remedies," a book which created a considerable sensation and produced much resentment among nostrum proprietors. Soon after the Germans made their first gas attack he joined the Sportsmen's Battalion of the British Army. He was moved to enlist at what was an advanced age for such a purpose by the detestation he felt for the prostitution of chemical science by the enemy in the use of poison gas. He felt that the Allies must reply in kind and that his vast chemical knowledge should be placed at the service of the War Office. After his period of training he transferred to the Royal Engineers in a response to a call for chemists, and soon afterward was made a lieutenant. He worked first at the Royal Army Medical College, where the problem of protecting our troops against gas was being attacked. He labored strenuously in providing a protection, not against one gas but against a large number, as he recognized that this fiendish method of warfare had great possibilities. The tests involved the wearing of the protective device in an atmosphere of gas as long as he could stand it, and his health suffered in the continual exposures. But he was undeterred, and up to the end of his career was eager to try on himself any new apparatus or the effect of a new gas when wearing a protector. He devised the first box respirator that was supplied to the troops. The mode of protection involved first the working out of a method—for making permanganate granules. Then it was necessary to discover the best method of preparing charcoal, the absorptive powers of which may vary twenty-fold, according to the method of preparation. These substances were at first made by private firms, but their resources not proving adequate for the enormous demands, he organized large factories where the process of manufacture was carried out under his direction. The magnitude of his task will be realized from the fact that in addition to 15,000 work people employed in the antigas department, 120,000 were engaged in the manufacture of box respirators. The factories supplied nearly 50 millions of respirators. His organization was so good that he never failed to respond when there was an increased demand, however sudden and unexpected. When the Americans failed to turn out as they expected a sufficient number of respirators in time for their troops, he was able to supply all deficiencies. For the excellence of his work he was promoted to Major in April, 1916, and Lieutenant-Colonel in January, 1917. A short time before he died he was appointed controller of the Chemical Warfare Department.

Another analytic chemist, Capt. Alexander Gemmell, who worked under Lieutenant-Colonel Harrison, has also died. His end is also attributed to experiments to insure protection of our troops against poison gas.

THE PROJECTED MINISTRY OF HEALTH IN GREAT BRITAIN

(Special correspondence)

London, Feb. 1, 1919.

American physicians will follow with unusual interest the agitation that has been aroused in England in relation to the possible establishment of a ministry of health. Many of the questions that have been raised for debate or consideration are identical with the issues involved in the creation of a comparable office in our own government, so that the public interest of medicine and hygiene might be represented by a responsible member of the cabinet. There can be no doubt that all thinking persons are having their attention turned to the important subject of the health of the nation. The war has taught the lessons of having a citizenship that is "fit" for the work of the world at all times. Enthusiastic groups of both the medical profession and the laity are interested in all sorts of ways—practical, philanthropic, scientific, sociological—in a considerable diversity of matters that are in essence a part of the health scheme. The daily press is an index of part of the agitation and performance in respect to such subjects as child welfare, maternal care, the campaign against venereal disease, industrial hygiene, tuberculosis and various epidemic diseases that form local or even national menaces. Naturally it has seemed timely to ascertain whether some correlation of effort is not advisable. Two generations ago the primary impulse to accomplish something for people's well-being was one of charity. Today a more pragmatic aim underlies much of the interest in health conservation; it is a motive of concern for national vitality, for the elimination of disease because it pays in the long run; it is the desire to deal with disease as a state or a nation, since the objections to interference with the liberty of the individual have long since been overruled by the advantage of the common good.

Is it possible to frame "a comprehensive scheme big enough for a big ideal"? Dr. Addison, the new president of the Local Government Board in England who may have charge of the proposed bill for establishing a ministry of health, believes that it will be quite possible "to improve the national armor against disease" by the projected consolidation of efforts under the financial assistance of the state. Among others who are enthusiastic for the new movement, Addison has pointed out that the business of the health ministry does not begin and end with hospital matters. In addition to regular clinics in the larger centers of population it is proposed to organize portable clinics and laboratories. The training and organization of midwives and nurses must be undertaken in a systematic way. The problems of maternity will demand scientific attention. All branches of sanitation and preventive medicine will be pursued. In a broad sense the organization will be that of a medical intelligence department quite as much as that of an administration bureau. There will be laboratories and other features necessary for research; and information of diverse character will be gathered by the public medical authorities.

There has been considerable speculation as to a possible antagonistic attitude on the part of the medical profession on the score that all physicians would presently either become public servants or be without work. According to Dr. Addison, no such socialization of medicine is contemplated; in fact, it seems to be recognized that the function of the new movement is to supplement, not to supplant, the work of the practitioner, whose position will in no way be interfered with. To endeavor to keep as many people as possible as well as possible, and to insure that no sick person shall lack adequate care and attendance, may necessitate new posts and create a demand for many physicians; but any work in the direction of diagnosis and therapy must be conducted under such auspices as will carry professional opinion with it. The quack and charlatan may lament, but the honest medical man need not bewail the expansion of knowledge and opportunity.

Some concern has also been expressed regarding the fate of existing hospitals established as private benefactions. Reforms may, of course, be initiated at the suggestion of a central authority on health matters. It would assuredly not be difficult to enumerate instances in which such interference might be a blessing in disguise. But we cannot imagine that any present-day practicable schemes would even dream of supplanting existing organization. The hospitals and other institutions that have heretofore been maintained by voluntary contributions need neither be abolished nor turned into state establishments. They should be assisted in return for services that they may be invited to render.

Some alarm has been expressed in England regarding the "danger of medical despotism" in any compulsory scheme dealing with prenatal care and the welfare of children. A woman publicist has even designated a ministry of health with legalized authority over such matters as a menace to women and children. The recent restrictions of personal liberty, as exhibited in the outcome of the prohibition movement in America, must teach, however, that the principle of the greatest common good is likely to limit our individual freedom in many ways in the future as it has done in the past. Democracy does not mean license to behave without regard to the welfare of others.

A further, perhaps more debatable, concern has been expressed with regard to established governmental research bureaus in medicine under the new English scheme. There is no question that a ministry of health should have a department for scientific investigation, which is the very backbone of progress. But there is a medical research committee already in existence as a permanent institution created under the English national insurance act. To some it has seemed advisable that this should continue in an independent existence because medical research in the broader sense must have a wider sphere than that of national or insular concern. As one writer has remarked, medical research must deal not with England and Wales, but with the empire. There is much to be said in favor of some individuality and independence of effort in research, even at the expense of some duplication.

PARIS LETTER

PARIS, Jan. 16, 1919.

Enrolling for Military Service the Young Men of the Invaded Zone

It has been decided by the premier not to delay enrolling the young men of the classes of 1915 to 1919 (from 19 to 23 years of age) not yet registered, and to summon for reexamination the classes of 1913 to 1915, who have been held in the invaded regions which have just been reconquered. A special commission will classify these young men according to their fitness for service. The young men who are accepted for the army or the auxiliary service will be assigned, with as little delay as possible, to the corps which they would have joined if they had been called to the colors at the same time as their comrades. The others will be left in civilian life either permanently or subject to another examination after a specified interval.

Physicians and the Tax on War Profits

Deputy M. Bergeon made inquiry of the minister of finance as to the following: (1) Supposing that the law of July 1, 1916, concerning the contribution of war profits, were applied to physicians, would the commissions charged with the administration of that law have the right to demand of physicians that they furnish a list of their patients, and, if so, (2) would the physicians who complied with that demand be considered as having violated professional confidence or of having committed an offense rendering them liable to punishment by law? To these questions the minister replied that physicians, in common with all other contributors, should furnish the commission with all the data needed to establish the basis of taxation. If a list of patients must be supplied in order to arrive at the necessary conclusions, it will not be considered as encroaching on their responsibility inasmuch as they will be conforming to a legal requirement, and, the agents of the law, to whom this information will be given, are themselves bound to professional secrecy.

The Activities of the American Red Cross

MERCHANDISE STORAGE

In order to increase its efficiency, the American Red Cross divided France into zones when it first began its work. These zones have been abolished, and warehouses have been established in the devastated regions in which the needed merchandise will be stored by the Comités de secours appointed by the French government as it is received from the American Red Cross. At the cessation of hostilities, considerable material and merchandise were left in the hands of the Red Cross. Hence the Red Cross authorities have asked the French government to cooperate in the distribution of these stores among the destitute population. Warehouses have been or will be established at Lille, Amiens, Laon, Châlons, Mézières, Verdun, and in Belgium at Brussels, Courtrai and Adinkerke.

TUBERCULOSIS PROPAGANDA

The director of the American Antituberculosis Mission recently called a meeting in Paris of the representatives of this propaganda who, during the past five months, have been making known all over France the most practical methods and the most simple means for combating and checking tuberculosis. Professor Gunn, assistant director of the Mission, reported the good results that have been obtained and detailed the program to be followed for 1919.

BALKAN RELIEF

The American Red Cross also sent a commission to the Balkans for the purpose of giving relief in Greece, Roumania, Serbia and Montenegro. The first contingent, in charge of Col. Henry W. Anderson, American Red Cross commissioner for the Balkans, has already left Paris; the remainder of the personnel will leave early next week. A special group consisting of physicians, nurses, etc., will be sent into each one of the four countries named, and all will be in charge of a directing staff whose headquarters will be at Belgrade. A special commission has been working in Serbia. It has furnished food and clothing to thousands of refugees in southern Serbia. This same commission will give relief to the people of northern Serbia and of eastern Macedonia.

Nurse Receives Decoration of Legion of Honor

Mme. Veuve Marie Segui, temporary nurse in military hospitals, has been made a chevalier of the Legion of Honor, with the following citation: "Devoted nurse, lavishing care on the war wounded since Sept. 1, 1914, was wounded while dressing a patient suffering from a grave septicemia and consequently contracted an infection which endangered her life and necessitated the amputation of her left arm."

Deaths

Dr. Louis-Edouard Bureau, doctor of natural science and formerly professor of botany at the Muséum d'Histoire naturelle, aged 88. He had been a member of the Académie de médecine, section of therapeutics and medical natural history, since 1901.——Dr. Frezoul, a former senator, aged 82 years, at Foix, département de l'Ariège. He served as a volunteer member of the medical corps during the Franco-Prussian war of 1870.

Dr. Etienne Destot, médecin-major of the first class, medicolegal expert of the tribunal de la Seine, died suddenly, aged 54 years. For several years he had been specializing in medical electricity and roentgenology. He published a number of works, notably on physiologic disturbances and the atrophy caused by the roentgen ray. When mobilization was begun he was put in charge of a hospital installed in a gymnasium in Paris.

Dispensary for Refugees

The Bureau des Secours généraux américains has opened a dispensary and a small hospital for refugees and évacués at Angoulême, département de la Charente. This work will be in charge of Dr. Lillie A. Arnett, of the Children's Bureau, who also has charge of the colony for children at Saint-Même, and visits regularly several small communes in the département de la Charente. The American Red Cross recently opened a dispensary for children at Essones in the département de Seine-et-Oise.

Books for the Blind

The Conférence of the "Livre de l'aveugle" was held in Paris under the presidency of M. Charles Krug, president of the Conférence des oeuvres d'assistance aux aveugles de guerre. Three sections were established: One section, presided over by General Balfourier, president of the Association Haüy pour le bien des aveugles, is charged with the task of cataloging and establishing a bibliographic service for books printed in Braille type; the second section, presided over by M. René Vallery-Radot, president of the Amis des soldats aveugles, will have charge of the printers and copyists and will ascertain the needs of blind readers; the third section, presided over by M. Ernest Vaughan, director of the Hospice des Quinze-Vingts, will have charge of the establishment of libraries for the blind.

Decoration of Legion of Honor for Brazilian Physician

At the time of his visit to the hospital maintained by the Brazilian government, Dr. Louis Mourier, undersecretary of state for the Service de Santé militaire, conferred the cross of the Legion of Honor on Dr. Paul de Rio Branco, surgeon of the hospital, who voluntarily gave his services to France about Aug. 29, 1914, and has been working in behalf of the wounded continuously ever since.

Sir Almroth Wright

The Académie des Sciences has elected Sir Almroth Wright, of London, corresponding member for the section on medicine.

Recrudescence of Rabies

Rabies, which had disappeared almost entirely before the war, has, since the beginning of hostilities, made alarming progress. This is attributed wholly to the many dogs wandering around in the invaded districts; but the ineffectiveness of the police measures is also a factor. Before the war between 300 and 400 persons presented themselves annually at the Institut Pasteur for antirabies treatment; in 1916, 1,388 patients were treated; 1,543 in 1917, and 1,800 in 1918.

Marriages

HUGO SELWYN TAIT, Asst. Surg., Lieut. (j. g.), U. S. Navy, to Miss Barbara Smith, at New Orleans, November 30.

SIDNEY CLEVELAND NILES to Miss Eva Brandenburg, both of Toledo, Ohio, at Washington, D. C., January 15.

GUSTAVE GOODMAN HERPE to Miss Elsa Kuhn, both of Chicago, February 11.

Deaths

Clarence John Blake ⊕ Boston; Harvard Medical School, 1865; University of Vienna, Austria, 1866; aged 75; a member of the American Academy of Ophthalmology and Oto-Laryngology; American Laryngological, Rhinological and Otological Society, and American Otological Society, and president of the latter organization in 1876-1877; president of the Ninth International Otological Congress; once president of the Boston Society for Medical Improvement and the Boston Society for the Advancement of Physical Education; lecturer on otology in his alma mater from 1870 to 1875; instructor from 1875 to 1888, and professor from 1888 to 1913, and later professor emeritus; aural surgeon to the Massachusetts Charitable Eye and Ear Infirmary since 1871; president of the Infants' Hospital, and manager of the Children's Hospital, Boston; editor of the *American Journal of Otology* from 1879 to 1892; author of a standard textbook on operative otology; died at his home, January 29.

Samuel Light Hauck ⊕ Ottumwa, Iowa; Rush Medical College, 1891; aged 49; for twenty-seven years surgeon in the voluntary relief department of the Burlington System, but for the last few months identified with the sanitary department of the Illinois Central Railroad in Chicago; chief surgeon of the American Commercial Travelers' Association; died at his home, in Ottumwa, January 22, from cerebral hemorrhage.

Henry Mitchell ⊕ Asbury Park, N. J., and Daytona Beach, Fla.; Bellevue Hospital Medical College, 1867; aged 73; president of the board of health of Asbury Park from 1880 to 1894; member, secretary and executive officer of the New Jersey State Board of Health from 1894 to 1908; formerly surgeon of the One Hundred and Third Infantry, N. Y., N. G.; died at his winter home at Daytona Beach, Fla., January 31.

Ashley Wilson Fly ⊕ Galveston, Texas; Louisville (Ky.) Medical College, 1875; aged 63; a specialist in surgery; mayor of Galveston from 1893 to 1899; for several terms president of the board of health, and chairman of the committee on public health; professor of anatomy in the Texas Medical College; for two terms a regent of the University of Texas; died at his home, January 24.

Heikobus Johannes Hubertus Hoeve, Meherrin, Va.; University of Illinois, Chicago, 1905; aged 37; at one time a member of the Iowa State Medical Society, and professor of anatomy, and director of the pathologic department in Drake University, Des Moines; a member of the American Association of Anatomists; died at his home, December 22, from pneumonia following influenza.

Thomas Hundley Seay ⊕ **Capt., M. C., U. S. Army,** Laurel, Miss.; University of Nashville, Tenn., 1906; aged 36; head of the Laurel General Hospital, and a member of the state board of health; who had been on duty at Fort Oglethorpe, Ga., until his discharge from the service a short time ago; died at his home, January 15, from pneumonia following influenza.

Leroy Grant Armstrong, Boscobel, Wis.; Rush Medical College, 1859; aged 84; a member and once president of the State Medical Society of Wisconsin; surgeon of the Sixth, Eighth and Forty-Eighth Wisconsin Volunteer Infantry (Iron Brigade) during the Civil War; for nearly fifty years clerk of the local board of education; died at his home, February 1.

Edward Lewis Rochfort ⊕ **Lieut., M. C., U. S. Army,** New York City; Yale University, New Haven, Conn., 1912; aged 28; an instructor in United States Government Neurological School No. 1, New York City; who received his discharge from the Army in December; died at the Neurological Institute, New York City, January 26, from influenza.

Ralph Edwin Shrom ⊕ **Asst. Surg., Lieut. (j. g.), U. S. N. R. F.,** Philadelphia; Jefferson Medical College, 1904; aged 36; a specialist in gynecology; assistant surgeon to the Philadelphia Polyclinic and Strittmatter's Private Hospital, Philadelphia; died at his home, January 26, from pneumonia following influenza.

Walter Greenough Chase ⊕ Boston; Harvard Medical School, 1901; aged 59; secretary of the pathologic section of the Pan-American Medical Congress, at its meeting in Panama in 1905; skilled in photography and the roentgen ray; a specialist in the treatment of nervous diseases; died at his home, January 27.

⊕ Indicates "Fellow" of the American Medical Association.

Zack Jackson Moore ⊕ **Lieut., M. C., U. S. Army,** San Antonio, Texas; University of Texas, Galveston, 1915; aged 32; who entered the service in July, 1917, and was on duty with the British Expeditionary Forces in France and was wounded on March 24; died in Woolwich, England, October 26, from pneumonia.

George Newton Ferris, Brooklyn; Long Island College Hospital, Brooklyn, 1879; aged 64; a member of the Medical Society of the State of New York; from 1881 to 1889 superintendent of the Kings County Insane Asylum; died suddenly at the home of his sister in Brooklyn, January 28, from heart disease.

Rienzi Robinson ⊕ Danielson, Conn.; Long Island College Hospital, Brooklyn, 1869; aged 76; formerly president of the Connecticut State Medical Society; a member of the consulting staff of the Day-Kimball Hospital, Putnam, Conn.; died at his home, January 31, from pulmonary tuberculosis.

Valentine Milton Reichard ⊕ Fairplay, Md.; Jefferson Medical College, 1882; aged 60; one of the most highly regarded physicians of western Maryland; one of the founders of the Washington County (Md.) Medical Society; died at his home, January 26, from heart disease.

John Dwight Freeman ⊕ Topeka, Kan.; Rush Medical College, 1897; a chief surgeon of the Atchison, Topeka and Santa Fe Railway Hospital, Topeka, since 1899; died in Stormont Hospital, Topeka, January 26, from pneumonia following influenza.

Edward Sanders, New York City; New York University, New York City, 1876; attending physician to Mount Sinai Hospital and Dispensary and physician to the Hebrew Orphan Asylum; died at his home, January 29, from heart disease.

Charles Seymour Hart, Marietta, Ohio; Columbus (Ohio) Medical College, 1877; aged 62; a member of the Ohio State Medical Association; for several years surgeon for the local street railway company; died at his home, January 25.

W. Rice Holtzman, Stinesville, Ind.; Louisville (Ky.) Medical College, 1893; aged 51; a member of the Indiana State Medical Association; for two terms postmaster of Stinesville; died at his home, recently, as the result of influenza.

Francis Webb Drew, St. Louis; College of Physicians and Surgeons, Keokuk, Iowa, 1886; aged 67; at one time a member of the Missouri State Medical Association; died at his home, January 25, from cerebral hemorrhage.

James Andrew McQuillan ⊕ **Lieut., M. C., U. S. Army,** Jackson, Mich.; St. Louis University, 1912; aged 30; on duty with the American Expeditionary Forces in France; was killed by a shell near Valenciennes, October 23.

Henry Blender ⊕ **Lieut., M. C., U. S. Army,** Okeene, Okla.; Keokuk (Iowa) Medical College, 1907; aged 34; stationed at Camp Greenleaf, Ga.; died at that place, October 7, from lobar pneumonia following influenza.

Robert Valentine Sawin, Brimfield, Mass.; Jefferson Medical College, 1885; aged 62; a member of the Massachusetts Medical Society; died at the home of his daughter in Storrs, Conn., January 19, from nephritis.

Maurice Steinberger ⊕ Bridgeport, Conn.; University of Budapest, Hungary, 1889; Eclectic Medical College of the City of New York, 1909; aged 53; died at his home, December 23, from lymphatic leukemia.

Henry A. Wall ⊕ Tacoma, Wash.; University of Oregon, Portland, 1889; aged 53; formerly city health officer of Tacoma; died in St. Joseph's Hospital in that city, January 24, from hemorrhage of the stomach.

Andrew Lee Wagoner, Hobart, Okla.; Vanderbilt University, Nashville, Tenn., 1894; aged 52; a member of the Oklahoma State Medical Association; died at his home, December 26, from cerebral hemorrhage.

William J. Armstrong, Washington, D. C.; Georgetown University, Washington, 1870; aged 83; a member of the Medical Society of the District of Columbia; died in Washington, D. C., December 28.

A. A. Hyer, Washington Court House, Ohio; American Eclectic Medical College, Cincinnati, 1882; aged 71; at one time a member of the Ohio State Medical Association; died at his home, January 28.

J. M. W. Langadale, Florence, Ind.; Medical College of Ohio, Cincinnati, 1874; aged 71; for forty-two years a practitioner and druggist of Florence; died at his home, January 28, from heart disease.

Harris Soper Greeno, Fairhope, Ala.; Bellevue Hospital Medical College, 1882; aged 87; first mayor of the Fairhope single tax colony; died in Mobile, Ala, February 1.

Joseph H. Haydon ⊕ Newark, N.J.; New York University, New York City, 1872; aged 67; consulting physician to St. James Hospital, Newark; died at his home, January 24, from cerebral hemorrhage.

Hugh L. Routh, Batavia, Ark.; Vanderbilt University, Nashville, Tenn., 1885; aged 74; a member of the Arkansas Medical Society; a veteran of the Civil War; died in Otsego, Mich., recently.

Charles Reinhold Baker, San Francisco; Cooper Medical College, San Francisco, 1900; aged 42; died in Franklin Hospital, San Francisco, January 30, from pneumonia following influenza.

Francis Joseph Ennis, Burlington, Vt.; University of Vermont, Burlington, 1914; aged 31; a member of the Vermont State Medical Society; died at his home, October 27, from influenza.

Albert A. G. Starck ⊕ Philadelphia; Jefferson Medical College, 1883; aged 66; also a graduate of the Philadelphia College of Pharmacy; died at his home, January 30, from heart disease.

William Makepiece Roads, Los Angeles; Medical College of Ohio, Cincinnati, 1887; aged 57; for many years a practitioner of Cincinnati; died at his home, January 10.

Charles Petite Tobin, Hampton, Ark.; Tulane University, New Orleans, 1879; aged 64; died at the home of his sister in Little Rock, Ark., January 14, from pneumonia.

William Mainland Brown, Oakland, Calif.; University of Louisville, Ky., 1872; aged 78; for many years a surgeon on Pacific steamships; died at his home, January 21.

David Harrison Conley, Naples, N. Y.; Cleveland University of Medicine and Surgery, 1868; aged 74; died in Clifton Springs, N. Y., November 8, from nephritis.

Henry Griswold ⊕ New York City; University of Louisvill, Ky., 1864; aged 75; a fellow of the New York Academy of Medicine; died at his home, February 1.

Camillo Bizzozero, Torrington, Conn.; University of Milan, Italy; aged 60; was run over and killed by a train at a grade crossing at Newfield, Conn., December 26.

Amant H. Ohmann-Dumesnil, St. Louis; Washington University, St. Louis, 1880; aged 61; died in the City Hospital, St. Louis, January 18, from tuberculosis.

Orlando Ewers, Nunn, Colo.; formerly of DeSoto, Wis.; aged 72; a practitioner for forty-four years; died at his home, December 25, from cerebral hemorrhage.

John Harford Chatten, Cincinnati; Eclectic Medical Institute, Cincinnati, 1859; aged 79; died suddenly in Akron, Ohio, January 20, from cerebral hemorrhage.

Joseph Allard, Fall River, Mass.; Indiana Eclectic Medical College, Indianapolis, 1887; aged 62; died at his home, December 15, from lobar pneumonia.

A. L. Nance, Gainesville, Ga.; Philadelphia University of Medicine and Surgery, Eclectic, 1868; aged 74; died at his home in October, 1918, from ascites.

James Patterson Burd, Philadelphia; University of Pennsylvania, Philadelphia, 1871; formerly of Juniata County, Pa.; died in Philadelphia, Dec. 16, 1918.

William I. Ballinger, Plain City, Ohio; Western Reserve University, Cleveland, 1866; aged 90; died at his home, December 29, from senile debility.

Henry L. Bawden, Ismay, Mont., formerly of Davenport, Iowa; State University of Iowa, Iowa City, 1873; aged 73; died at his home, January 22.

John Noble Yates, Wilmington, Del.; Hahnemann Medical College, Chicago, 1895; aged 74; died at his home, January 17, from cerebral hemorrhage.

Charles Hatfield Greenough, Bayport, N. Y.; Bellevue Hospital Medical College, 1873; aged 69; died at his home, January 17, from septicemia.

Robert Stewart, St. Joseph, Mo.; Missouri Medical College, St. Louis, 1856; aged 83; died at his home, January 14, from cerebral hemorrhage.

Jacob Leonard Eisendrath ⊕ Chicago; University of Illinois, Chicago, 1904; aged 38; died at his home, January 25, from pneumonia.

Thomas Lewis Riley, New York City; Bellevue Hospital Medical College, 1897; aged 47; died in Bellevue Hospital, January 24.

John A. Kressley, New Tripoli, Pa.; Hahnemann Medical College, Philadelphia, 1889; aged 56; died at his home, January 19, from rheumatism.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

CERELENE NOT ADMITTED TO N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report declaring Cerelene inadmissible to New and Nonofficial Remedies.

W. A. PUCKNER, Secretary.

Cerelene, a paraffin preparation for the treatment of burns, was submitted to the Council by the Holliday Laboratories, with the statement that it was composed of 84 per cent. paraffin, 15 per cent. myricyl palmitate, and 1 per cent. purified elemi gum to which is added oil of eucalyptus 2 per cent. and betanaphthol 0.25 per cent. It was explained:

"Myricyl Palmitate is a purified form of Beeswax, free from all impurities, acids, etc., which is solely manufactured by this Company. . . ."

It was also stated that on "special order" Cerelene has been made containing oil of eucalyptus and resorcin, oil of eucalyptus and picric acid, and picric acid alone. The following report on the preparation was presented to the Council by the referee to whom Cerelene had been assigned:

Cerelene is another compound wax for the treatment of burns. According to the work of Sollmann (J. A. M. A., 1917, 68, p. 1799) it is highly improbable that compound mixtures have any advantage over simple paraffin of low melting point. Cerelene must therefore be considered as an unessential modification of paraffin, and as in conflict with Rule 10; unless definite evidence of superiority is submitted. Cerelene mixtures containing medicinal ingredients also appear unscientific since the evidence that the ingredients do not leave the wax has not been successfully contradicted. Finally, the claims made for Cerelene are rather extreme, and would need some revision before they could be accepted.

The A. M. A. Chemical Laboratory reports:

The physical properties of Cerelene are as follows:

Melting point 50.0 C. by U. S. P. method.	
Ductility limit	30.5 C.
Plasticity limit	26.4 C.
Not strong at	38 C.

Adheres moderately well; detaches with "pulling." On heating, readily loses eucalyptol, and a small amount of resinous substance forms in the bottom of the beaker. If Cerelene is heated to 145 C. and cooled, the resulting product no longer has the properties of the original Cerelene.

It is recommended that the preceding report be sent to the Holliday Laboratories, and that unless its superiority over simple paraffins is demonstrated and the unwarranted claims abandoned, Cerelene be declared inadmissible to New and Nonofficial Remedies for conflict with Rules 6 and 10.

This report was submitted to the Holliday Laboratories with the information that it had been adopted, Oct. 3, 1917. It was also explained that before Cerelene could be accepted, the unofficial and unstandardized constituent "myricyl palmitate" would have to be considered and accepted for New and Nonofficial Remedies since, for obvious reasons, the Council does not accept a preparation which contains an unofficial and unstandardized substance not in N. N. R.

The Holliday Laboratories acknowledged receipt of the Council's report and asked that the matter be held in abeyance until the requested evidence had been obtained. Later the Council was advised that the advertising circulars for Cerelene had been withdrawn with the exception of one giving directions for its use. Five months later, the firm stated that experiments were being made "to determine the actual strength of Cerelene in comparison with other paraffin waxes.

. . ." Nothing further has been heard from the Holliday Laboratories and no reply has been received to an inquiry made Oct. 12, 1918. The Council therefore authorizes publication of its report declaring Cerelene inadmissible to New and Nonofficial Remedies.

Correspondence

"THE LOS ANGELES COUNTY HOSPITAL AND INTERNS"

To the Editor:—Relative to the editorial comment in THE JOURNAL, Jan. 4, 1919, p. 46, I believe that the presentation of the facts regarding the Los Angeles County Hospital is so worded as to give a wrong impression of the conditions that exist in this institution. The civil service examinations for interns for the Los Angeles County Hospital are held in San Francisco, Los Angeles, St. Louis, Chicago, and one or two other cities. According to the ranks of the men who take the examinations, the civil service compiles a list. When vacancies occur, the next highest man is called on to see whether he will accept the position.

When osteopaths have been admitted as interns, it simply means that these men took the civil service examinations, and that in due time when vacancies occurred, their names were reached and the positions had to be offered to them. This is due to the fact that a goodly number of the men who take the examinations, and who are high up on the list, do not accept the positions in the first place, or if we wait, then they accept other work. In that way the bunch of eligibles among well trained men reaches an end, and then the only others on the list are those of lesser education and training, who, however, having taken the examinations, are, according to law, to have the privilege of accepting these positions.

There is no thought on the part of the Los Angeles County Hospital authorities to put osteopath interns in that institution. The hospital must, however, have interns, and all it can do is to provide for examinations on a large scale and then hope that well trained men in regular medicine will be in sufficient number on these lists to keep the internships always among that group. In practice, however, it has not worked out that way for the reasons already noted.

GEORGE H. KRESS, M.D., Los Angeles.

"THE SUPPLY OF PRACTICAL NURSES"

To the Editor:—I read with much interest your excellent editorial, "The Supply of Practical Nurses," which appeared in THE JOURNAL, January 25. Congratulations! I was glad to hear some one with backbone speak up. Truer words were never spoken. The nursing situation here in Portland and in Maine, for that matter, has been, and is, most trying, for just the very reasons mentioned in your editorial.

ADAM P. LEIGHTON, JR., M.D., Portland, Maine.

HARMLESSNESS OF GLASS IN DIGESTIVE TRACT

To the Editor:—The authors of the recent excellent experimental proof of the harmlessness of glass in the digestive tract (THE JOURNAL, Dec. 28, 1918, p. 2127), and that part of the public which has been so greatly worked up over rumors of contamination of food by glass, may be equally interested to recall that this subject was one of practical interest long ago, when murder by poison was not infrequent.

When Benvenuto Cellini was a prisoner of the pope in Rome in 1539, an enemy in the papal court attempted his life by the use of diamond dust in the prisoner's food. As Cellini says:

> In itself it is not poisonous at all; but being extraordinarily hard, its sharply pointed angles do not become rounded when it is reduced to powder, as would be the case with other stones. Only the diamond keeps its sharp edge, so that, if it enters the stomach along with food, during the process of digestion it sticks to the coats of the stomach and the bowels, and as the new food comes ever pushing forward, it is not long before it pierces them and death is the result; whereas no other kind of stone or glass sticks to the organs, but goes on its way with the food.—Life of Benvenuto Cellini, translated by McDonnell, Everyman's Edition, p. 263.

Fortunately for Cellini, the jeweler employed to powder the diamond pocketed the gem and substituted a softer stone, a beryl, which caused no harm at all.

GEORGE W. CORNER, M.D., Berkeley, Calif.

"METHEMOGLOBINEMIA DUE TO POISONING BY SHOE DYE"

To the Editor:—I am glad that Dr. Stifel has so forcibly presented the findings of the cases of nitrobenzene poisoning from shoe dye (THE JOURNAL, Feb. 8, 1919, p. 395). It has long been the custom for shoe dressing manufacturers to add a certain amount of this very dangerous substance to their wares. I am unable to find that it serves any other purpose than the odor it gives the preparation. It would seem desirable that some one should vigorously protest against the reckless use of this particular poison. Having myself seen fatal cases from nitrobenzene poisoning, I am strongly prejudicial against the continued use of this substance as a scent for shoe dressings, soaps and the so-called disinfectants, simply because it is a cheap perfume and covers the unpleasant odors. The medical profession should take a definite stand against useless poisons.

W. S. WADSWORTH, M.D., Philadelphia.

SUBNORMAL TEMPERATURE FOLLOWING INFLUENZA

To the Editor:—During this pandemic of influenza I have observed many patients with a temperature of 94, and several much lower than 94. Some few I find with a decided slowness in the heart's action. Is this low temperature due to a relaxed condition of the entire nervous system and lowered vitality brought about by improper nourishment? In my experience I find that patients having the influenza or those recovering from it are usually suffering with anorexia. This, I understand, would lower the vitality; but I cannot see why the unusual subnormal temperature is so marked.

J. P. BRANDON, M.D., Essex, Mo.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

OFFICER'S RIGHT TO A MONTH'S PAY WHEN DISCHARGED FOR DISABILITY

To the Editor:—I was a first lieutenant in the Medical Reserve Corps from Aug. 11, 1917, to March 6, 1918, when I was honorably discharged on account of "disability existing prior to my entrance into the service, etc." I was not given an extra month's pay to set me up in the practice that I had given up. Now, Article III, Section 300, War Risk Insurance Act of Oct. 6, 1917, as amended June 25, 1918, provides that "officers and enlisted men or other members shall be taken to have been in sound condition when examined, accepted and enrolled for the service, and thereafter entitled to compensation under the act of disability." In other words, "legally no disorder can have preexisted in a person accepted for military service." Am I not therefore entitled to an extra month's pay as any man who is honorably discharged?

B. W.

ANSWER.—According to the Act of Congress approved May 24, 1917—the Selective Service Act—"the President is hereby authorized to discharge any officer from the office held by him under such appointment for any cause which, in the judgment of the President, would promote the public service; and the general commanding any division and higher tactical organization or territorial department is authorized to appoint from time to time military boards . . . to examine into and report upon the capacity, qualification, conduct and efficiency of any commissioned officer within his command

other than officers of the Regular Army holding permanent or provisional commissions therein . . . and if the report of such board be adverse to the continuance of any such officer and be approved by the President, such officer shall be discharged from the service at the discretion of the President with one month's pay and allowances," for the payment of which application should be made to the Director of Finance, Pay of the Army Division, Pay and Mileage Branch, Munitions Building, Washington, D. C.

LINIMENTS OF SOLID CONSISTENCY

To the Editor:—Please describe a method of preparing a solidified liniment, giving the proportions of chemicals used to make a 5 pound mixture, how much capsicum, terebene, oil of eucalyptus, camphor, etc. —if I desired to use these drugs—would be necessary to add to 5 pounds of petrolatum in order to produce a decided effect without blistering, etc. Also, what can I use to give it a dark amber color?

N. B. NOLL, M.D., Slovan, Pa.

ANSWER.—Linimentum camphorae, U. S. P., contains 20 per cent. of camphor in cottonseed oil. Petrolatum may be used in place of the cottonseed oil. The camphor is dissolved in the petrolatum by the aid of gentle heat, 1 pound of camphor being used to 4 pounds of petrolatum. Any quantity of terebene or oil of eucalyptus desired could be incorporated in the petrolatum, the latter being liquefied first by warming.

If an amber color is desired, dealers in petrolatum products will supply an amber petrolatum of the shade wanted.

The National Formulary, Edition 4, p. 103, gives a formula for linimentum saponato-camphoratum, or solid opodeldoc. This liniment is a solid and contains camphor, volatile oils, etc. No doubt this formula could be modified to include other medicaments, or entirely to replace the camphor and volatile oils. The same book (p. 164) contains a formula for petroxolinum spissum, or solid petroxolin, which might be used as a basis for the incorporation of drugs such as our correspondent mentions.

An ointment of capsicum is described in the British Pharmacopeia, 1914, p. 437. This is made by digesting 25 gm. of bruised capsicum fruit with a mixture of 10 gm. of paraffin, 75 gm. of petrolatum and 10 gm. of lard, and then straining the mixture.

ROACHES IN A SANATORIUM

To the Editor:—We are having a great deal of trouble at the present time with roaches throughout the building, and it occurred to me that you might be able to make some suggestions as to the best method of exterminating the roaches. We have used various sprays and powders with very unsatisfactory results.

L. F. M. ——, Sanatorium ——, New York.

ANSWER.—According to Farmer's Bulletin 648, United States Department of Agriculture, the most effective material for the extermination of roaches is a mixture of 50 per cent. of sodium fluorid and 50 per cent. of inert material, such as flour or starch. It is employed in the same manner as other roach powders, that is, by forcing into crevices, sprinkling around drain pipes, etc.

Milk and German Infant Mortality Rate.—With regard to milk, as, indeed, with regard to almost everything else, we have hitherto labored under a foolish Germanic delusion, which the war has happily exploded. We have actually believed that we owe the best research work and the elucidation of the most difficult problems in connection with milk to Germany. The vainglorious pretensions of that egregious people, their appropriating propensities which have led them to purloin and fake up as new discoveries made in other countries, and the flattering utterances of some short-sighted professors of our own who have studied for a few months in a German laboratory, and are proud of their gutteral attainments, have conduced to this misconception. In a recent work on "Milk," published in this country, I find that of 273 references appended to the chapters on the biologic properties of milk, 181 are to books and papers of German origin. Nothing could be more misleading. The Germans have engaged in all sorts of meticulous investigations, and have endlessly corroborated and contradicted each other; but, as regards all practical hygiene and administrative questions relating to milk, we should stand just where we are today if Germany had never existed.—Sir James Crichton-Brown, *Journal of State Medicine.*

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALASKA: Juneau, March 4. Sec., Dr. L. P. Dawes, Juneau.
ARIZONA: Phoenix, April 1. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.
CALIFORNIA: Los Angeles, March 17-20. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.
COLORADO: Denver, April 1. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
CONNECTICUT: New Haven, March 11-12. Sec. Reg. Bd., Dr. Chas. A. Tuttle, 196 York St., New Haven; Sec. Eclectic Bd., Dr. J. E. Hair, 730 State St., Bridgeport, and Sec. Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven
IDAHO: Pocatello, April 1-2. Sec., Dr. Ray H. Fisher, Rigly.
ILLINOIS: Chicago, March 3-5. Mr. F. C. Dodds, Supt. of Registration, Springfield.
INDIANA: Indianapolis, Feb. 26-28. Sec., Dr. W. T. Gott, 84 State Capitol Bldg., Indianapolis.
IOWA: Iowa City, March 24-26. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.
MAINE: Portland, March 11-12. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.
MASSACHUSETTS: Boston, March 11-13. Sec., Dr. W. P. Bowers, Rm. 501, No. 1 Beacon St., Boston.
MINNESOTA: Minneapolis, April 1-4. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.
MONTANA: Helena, April 1. Sec., Dr. S. A. Cooney, 205 Power Bldg., Helena.
NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, June 2-7. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.
NEW HAMPSHIRE: Concord, March 13-14. Sec., Dr. Charles Duncan, Concord.
RHODE ISLAND: Providence, April 3-4. Sec., Dr. B. U. Richards, State House, Providence.

ANNUAL CONFERENCE ON MEDICAL EDUCATION AND LICENSURE

The next conference on Medical Education and Licensure will be held on the Eighteenth Floor of the La Salle Hotel, Monday and Tuesday, March 3 and 4, 1919. On Monday morning the Council on Medical Education will hold its Fifteenth Annual Conference, the session to begin at 9 o'clock. The program is as follows:

Opening remarks, Dr. John M. Dodson, acting chairman of the Council on Medical Education, Chicago.

"The Year in Medical Education," Dr. N. P. Colwell, secretary of the Council on Medical Education, Chicago.

"The Needs of Medical Education as Revealed by the War," Brig. Gen. E. L. Munson, Medical Corps, U. S. Army.

"The Medical Enlisted Reserve Corps and Its Relations to Medical Education During the War," Capt. F. C. Waite, Sanitary Corps, U. S. Army.

"The Desirability of Units of the Reserve Officers' Training Corps in Medical Schools," Lieut.-Col. H. D. Arnold, Medical Corps, U. S. Army.

Discussion: Major-Gen. Merritte W. Ireland, Surgeon-General, U. S. Army.

Rear-Admiral William C. Braisted, Surgeon-General, U. S. Navy.

Brig.-Gen. F. A. Winter, Army Medical School.

Rear-Admiral E. R. Stitt, Navy Medical School.

On Monday afternoon there will be a joint conference of the Council on Medical Education with the Federation of State Medical Boards, the session to begin at 2 o'clock. The program is as follows:

"Hospital Standardization and the Intern Year," Dr. A. R. Warner, president of the American Hospital Association, Cleveland.

Discussion: From the Standpoint of the Medical School, Dr. E. P. Lyon, dean, University of Minnesota Medical School, Minneapolis.

From the Standpoint of the State Licensing Boards, Mr. Francis W. Shepardson, director of the Department of Registration and Education of the state of Illinois, Springfield.

From the Standpoint of the Hospital, Mr. Richard P. Borden, Trustee of the American Hospital Association, Fall River, Mass.

On Tuesday morning there will be a joint conference of the Federation of State Medical Boards with the Association of American Medical Colleges, the session to begin at 10 o'clock. The program is as follows:

"Relation of Teaching Methods to Licensure Examinations," Dr. Walter P. Bowers, secretary of the Massachusetts State Board of Registration in Medicine, Boston.

"Cooperation in Examinations by the National Board of Medical Examiners, State Licensing Boards and the Medical Schools," Dr. John S. Rodman, secretary of the National Board of Medical Examiners, Philadelphia.

Discussion by Drs. John M. Dodson, B. D. Harison, Isadore Dyer and Thomas McDavitt.

On Tuesday afternoon the Association of American Medical Colleges and the Federation of State Medical Boards will hold separate meetings including their business sessions. At the meeting of the Association of American Medical Colleges, the following program will be presented:

President's Address, Dr. W. J. Means, Columbus, Ohio.

"Lengthening the College Term," Dr. George Blumer, dean of the Yale University School of Medicine, New Haven, Conn.

"Premedical Requirements of Returning Soldiers," Dr. E. P. Lyon, dean, University of Minnesota Medical School, Minneapolis.

"Freedom in Medical Education," Dr. C. R. Bardeen, dean, University of Wisconsin, Medical School, Madison.

At the meeting of the Federation of State Medical Boards of the United States, besides the reports of standing committees and the annual election of officers, the program will consist of:

President's Address, Dr. David A. Strickler, secretary of the Colorado State Board of Medical Examiners, Denver.

"The Annual Registration of Physicians," Dr. Frederick R. Green, secretary of the Council on Health and Public Instruction of the American Medical Association, Chicago.

R. O. T. C. UNITS AT MEDICAL SCHOOLS

The Medical Department of the Army is interested in the establishment of R. O. T. C. units at medical schools as a means of building up a reserve corps whose members, when called from civilian life to military service, will be competent to perform the essential duties of medical officers in the Army without further training. Rapid mobilization of an army should be provided for, and the "firing line" of the Medical Department begins the moment that soldiers are assembled in camps.

For this purpose these men should have, in addition to the qualifications for civilian practice, at least the following qualifications:

1. A knowledge of military hygiene and sanitation.

2. A sufficient knowledge of army organization and methods to enable them to procure supplies and carry on the administrative functions of their positions.

3. A sufficient military training to enable them to command the soldiers of the Medical Department under their charge.

These requirements can best be met through training in R. O. T. C. units established in medical schools and in summer camps. It is believed that such training can be so arranged as not to interfere seriously with the course of study in medicine, and that the physical training and discipline incident thereto will be of distinct personal benefit to the students.

These general ideas were presented for consideration at a conference at Chicago, January 11, in connection with the meeting of the Association of American Colleges. The general plan was unanimously approved by this conference, and the opinion was expressed that a concrete plan along these lines would be approved by medical schools. The details of a definite program for R. O. T. C. units in medical schools are now being worked out and will be presented for the consideration of all medical schools at the conference on medical education in Chicago, March 3 and 4, 1919.

New Hampshire December Examination

Dr. Charles Duncan, secretary of the New Hampshire Board of Registration in Medicine, reports the written examination held at Concord, Dec. 28-29, 1918. The examination covered 11 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 2 candidates examined, 1 passed and 1, an osteopath, failed. Two candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Tufts College Medical School	(1910)	92

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Boston University	(1890)	Mass.
University of Vermont	(1880)	Mass.

Book Notices

War Neuroses. By John T. MacCurdy, M.D., Psychiatric Institute, Ward's Island, New York, with a Preface by W. H. R. Rivers, M.D., Fellow of St. John's College, Cambridge. Cloth. Price, $2.50. Pp. 132. New York: G. P. Putnam's Sons, 1918.

The author was sent to England in 1917 to study nervous disorders caused by the war, and this excellent monograph is the result of his observations in British hospitals. It is one of the best-balanced contributions to the subject as yet published, although it is to be regretted that the author did not have the benefit of a visit to France as well, for the French were quick to appreciate the war neuroses and prompt in providing for them. Some of the matter in the book is relatively out of date and should be revised. For instance, the statement is made that "the term 'shell shock' has been officially adopted by the British War Office." In fact, the term has been officially abolished.

MacCurdy's classification is delightfully simple, as he believes that the vast preponderance of cases may be divided into two types: anxiety states and conversion hysteria. The former resembles what frequently is termed neurasthenia (though we believe it is more like psychasthenia), and the latter is ordinary hysteria, which the author qualifies as *conversion* because an idea is carried over into a physical symptom. Psychologically the essential mechanism is the same in that the psychoneurosis is a subconscious means of escape from a situation which for some reason or other has become insupportable. Anxiety states are more frequent in officers, in the more intelligent, in those who (more or less unconsciously) long for death. Hysteria is more frequent in privates, the less intelligent, and in those who desire a wound as a means of relief. Typical cases are reported to illustrate the types and illuminate the pathogenesis. If the author's classification is simple, his descriptions and his explanation of the nature of the cases are equally clear. He succeeds in making a complex subject easily understandable. These features make his monograph of permanent value. Although the advent of peace has dissipated the majority of war neuroses, the principles of pathology, genesis and treatment so lucidly expounded, apply to the neuroses of civil life. Unfortunately, however, the peace neuroses are apt to be more complex and more difficult to treat than those of war.

Chapter VI is a very rational one on concussion, and is wholesome reading for any practitioner because it so well shows the difference between the organic and the functional cases. A short chapter on heart neuroses is also very good and anticipates the general conclusion which has followed, that most of the cases in soldiers of "disordered action of the heart" are not neurotic in the narrow sense but are to be regarded as of organic origin, either from some endocrine disorder, disturbance of the vegetative nervous system or involvement of the inherent cardiac mechanism.

Roentgen Diagnosis of Diseases of the Head. By Dr. Arthur Schüller, Head of the Clinic for Nervous Diseases at the Franz Joseph Ambulatorium, Vienna. Authorized Translation by Fred F. Stodking, M.D., M.R.C., with a Foreword by Ernest Sachs, M.D., Associate Professor of Surgery in Washington University. Approved for Publication by the Surgeon General of the United States Army. Cloth. Price, $4. Pp. 305, with 97 illustrations. St. Louis: C. V. Mosby Company, 1918.

Roentgenography of the skull has come to occupy an important place in the diagnosis of intracranial conditions. Schüller has studied this subject from every angle, and presents his findings in a practical rather than technical manner; his book will therefore appeal more to the clinician than to the roentgenologist. Normal conditions of the skull are excellently described and illustrated, and make it possible for any careful observer to distinguish normal variations from pathologic conditions. Chapter I reviews the normal relations as to size, shape and structure of the skull at various ages, as well as the different varieties of skulls. Chapter II treats of the irregularities in the development of the skull, the anomalies of size and shape in consequence of disturbances in growth of the skeleton, changes in structure of the bone in consequence of inflammation and new growths, and injuries of the skull. Chapter III, in addition to pathologic

changes in the brain that can be exhibited roentgenologically, takes up the changes in the skull produced by intracranial affections. In the appendix are discussed the changes that can be determined roentgenologically in the nose, ear, eye and teeth. The many excellent illustrations bring out clearly the various points described in the text. The extensive bibliography which follows the appendix cannot fail to prove of value. American roentgenologists have not been overlooked entirely, although some meritorious work done in this country on the roentgenologic findings in the skull in epilepsy receives no mention whatever.

SYPHILIS, PALUDISME, AMIBIASE: TRAITEMENT INITIAL ET CURE DE BLANCHIMENT. Par Paul Ravaut, Médecin des Hôpitaux de Paris. Préface du Professeur Fernand Widal. Paper. Price, 4 francs. Pp. 88. Paris: Masson & Cie, 1918.

In the one volume Ravaut considers syphilis, malaria and amebiasis, emphasizing their close relationship through their protozoal origin, through the fact that there is a medication almost specific for each, and through the many points of similarity that they present throughout their course and in their treatment. The author is an ardent advocate of the necessity for vigorous treatment in the early stages of these diseases, for in all of them the chances for a cure are best at this time, before the organisms have established themselves in visceral foci. He gives detailed outlines of his plans for intensive early treatment, together with numerous formulas. He also describes the methods of treatment to be followed in the later or chronic stages. Thus the text embodies monographs on the treatment of these three diseases, which have been so frequent and important in France during the war, and is a summary of the recent advances that have been made in the knowledge of their treatment.

A TEXT-BOOK OF GENERAL BACTERIOLOGY. By Edwin O. Jordan, Ph.D., Professor of Bacteriology in the University of Chicago and in Rush Medical College. Sixth edition. Cloth. Price, $3.75 net. Pp. 691 with illustrations. Philadelphia: W. B. Saunders Company, 1918.

New editions are often simply new impressions without any additions or changes. Dr. Jordan's work is a new edition in the true sense of the word because it brings all of the subject matter up to date. Because of the advancing knowledge of certain pathogenic bacteria, the chapter on the pneumococcus has been entirely rewritten and that on the meningococcus extensively revised. Those who have followed the large amount of literature concerning the pneumococci during the last two or three years will be astonished to find how briefly and compactly Dr. Jordan has summarized these numerous investigations. Of course, the literature of this subject has been greatly augmented by the recent epidemic of respiratory infections, and no doubt more extensive addition will be required for the next edition of the book. There are also new sections giving brief summaries of our present knowledge of infectious jaundice, rat-bite fever and trench fever. This is perhaps one of the best general introductions to the subject of bacteriology that has been prepared. With excellent discrimination the author lays stress on the fundamental facts of interest to the beginning student and to the general reader. Those who find it necessary to go farther into the subject have the way pointed out for them by well-chosen bibliographic references.

PERSONAL HYGIENE AND HOME NURSING: A PRACTICAL TEXT FOR GIRLS AND WOMEN FOR HOME AND SCHOOL USE. By Louisa C. Lippitt, R.N., Assistant Professor of Corrective Exercises, University of Wisconsin. Cloth. Price, $1.28. Pp. 256, with 79 illustrations. Yonkers-on-Hudson: World Book Company, 1919.

This book aims to give the general principles of home nursing to girls and women. It lays down practical instruction for the conduct of daily life and gives directions for preventing the spread of infection from cases of communicable disease. The reader is furnished with information as to what to do in cases of accident or sickness, and also concerning the use of a few simple home remedies. A better knowledge of the contents of this book will lead the women of the country to better appreciate the advice and services of a physician and enable them to understand the fallacy of many of the unscientific fads which are now so common. The book is written in an interesting style and is well illustrated.

Social Medicine, Medical Economics and Miscellany

A Comparison of the Mortality Rates by Weeks During the Influenza Epidemic of 1889-1890 and During the Primary Stage of the Influenza Epidemic of 1918 in Twelve Cities in the United States

In *Public Health Reports* (Jan. 31, 1919) are published charts and tables whereby it is possible to compare the epidemic of 1890 with the recent epidemic of respiratory disease for twelve of the large cities of the United States. The 1890 figures are obtained from a compilation made by Dr. S. W. Abbott, secretary of the Massachusetts State Board of Health. The peak weeks of that epidemic are compared with the peak weeks of the present epidemic. As a basis for

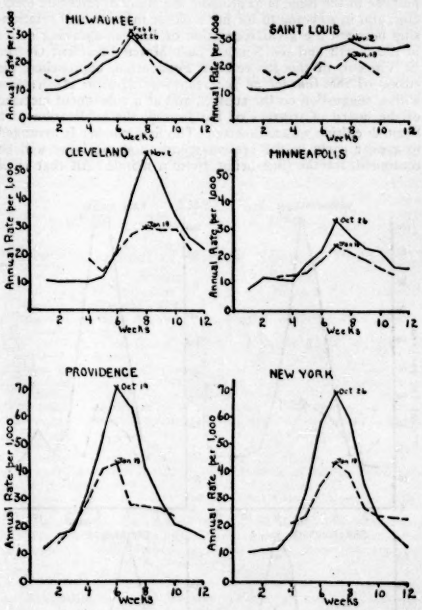

Chart 1.—Annual death rate per thousand population from all causes, by weeks, in the influenza epidemic of 1889-1890 (broken line) and 1918 (continuous line).

comparison, the annual mortality rate by weeks has been employed, since this affords a true picture of the mortality rates as affected by the epidemic. In the accompanying charts the mortality rates have been plotted for each of the twelve cities and for the twelve cities as a single population group. From the statistics and the charts, *Public Health Reports* concludes that:

1. The mortality rate rose to a much higher point during the primary wave of the 1918 epidemic than in the epidemic of 1889-1890 in nine of the twelve cities. It is of interest to note that the rate was relatively low during both epidemic periods in St. Louis, Milwaukee and Minneapolis. If the mortality during the eight weeks of highest mortality is compared for the two epidemic periods in the twelve cities, considered as a single population group, it is seen that the annual mortality rate during the period Dec. 15, 1889, to Feb. 8, 1890, was 26.7, as against 35.2 for the period Sept. 29 to Nov. 23,

1918. In the peak week the rate rose to 55.6 in the 1918 epidemic as compared with 35.4 in the 1889-1890 epidemic.

2. While considerable irregularity in the curves as plotted in Chart 1 is evident, the curves of the two epidemics manifest, on the whole, quite a striking similarity for the same cities considered individually and as a whole. The length of the primary stage or wave—aside from recrudescences or continuance of relatively high, but not truly epidemic mortality rates—was quite similar for the two epidemics in all of the cities.

Spanish-American Medical Fellowship

Commenting on the publication of a Spanish edition of THE JOURNAL, the London *Lancet*, January 11, says: "The spirit of friendly cooperation has invaded medical circles on both sides of the Atlantic, and one of its latest developments is the proposed issue of a Spanish edition of the very ably edited *Journal of the American Medical Association*. The purpose of the issue is to promote the study of scientific medicine, and in so doing to further a closer international relationship between the great federation of English-speaking states in the North and the South. Last March President George E. Vincent, of the Rockefeller Foundation, approached the editor of the *Journal of the American Medical Association* with a suggestion on the subject, and at a subsequent meeting of the board of trustees of the Journal the publication of a Spanish edition was authorized. The first number is arranged to appear early in the present month, and the issue will be continued, for the time being, twice a month. All that is of more general interest and permanent value in the weekly Chicago edition will appear in the Spanish issue. Some 2,000 medical practitioners in Central and South America have been asked for their opinion as to the reception such a journal would meet with, and all the replies as yet received have been favorable. Up to the present Mexico and South America have been wont to turn to France and Germany for undergraduate and postgradute teaching, and to take from them their inspiration toward progress. This new venture may lead scientific men generally of the American Continent to realize their identity of interest and to open up opportunities for interchange of knowledge and of the results of research in various fields. We do not construe it in the sense of a rigid application of the Monroe doctrine. Certain standard English textbooks of medicine have already been translated into Spanish, and we should like to see this peaceful form of penetration continue and develop."

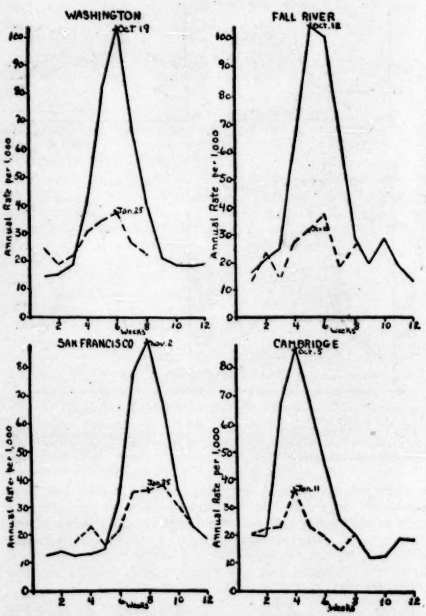

Chart 2.—Annual death rate per thousand population from all causes, by weeks, in the influenza epidemic of 1889-1890 (broken line) and 1918 (continuous line). (See page 517.)

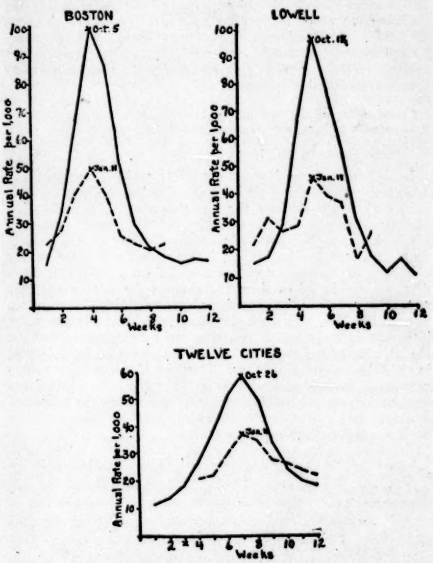

Chart 3.—Annual death rate per thousand population from all causes, by weeks, in the influenza epidemic of 1889-1890 (broken line) and 1918 (continuous line). (See page 517.)

Demobilization and Disease

The workmen and soldiers' council at Berlin, it is reported, recently has issued an appeal to the public, signed by sixteen physicians, pointing out the danger of dissemination of disease by the returning soldiers. Every soldier who feels sick is urged to go at once to some physician or hospital and remain under treatment so long as ordered. Those with vermin are urged to get deloused immediately. It says that those who do not heed these warnings will be doing great injustice to themselves, to their families, and to the entire people. The *Nederlandsch Tijdschrift*, which reports this item, adds that the measures which would have been taken with regular demobilization have been impossible of application in full, but the Demobilmachungsamt has provided for medical examination of soldiers on their discharge; when they are billeted anywhere they have to present a certificate that they have passed this examination. It is reported from Vienna that many soldiers being treated in hospitals for venereal diseases have run away from the hospitals. A large number of dispensaries, open day and evening, have been installed for free treatment of these diseases. The physicians returning from army service have charge of these dispensaries. Notices to the public give directions for reaching the delousing stations.

Medicolegal

Evidence in Action by Physician for Services

(Hobbs v. Hullman (N. Y.), 171 N. Y. Supp. 390)

The Supreme Court of New York, Appellate Division, Third Department, in reversing a judgment obtained by the plaintiff, a physician, for services rendered to the defendant's wife, holds that the nurse in attendance, who was not a registered or professional nurse, was properly permitted to give testimony of conversations between the physician, the defendant and herself as to the patient's condition and its cause. But it was error to permit the plaintiff to go into particulars as to the condition of the patient, and conversations between him and the husband with reference to the patient's condition and its cause. This evidence was inadmissible under Section 834 of the Code of Civil Procedure. This evidence was so clearly within the prohibition of the statute that a judgment influenced by it should not stand. It is against public policy to permit a physician to make such disclosures, even in an action to recover for his services. The evidence was unnecessary, and could have been offered only to prejudice the jury against the defendant, or to coerce him into a settlement. The court cannot say that it did not influence the result.

No Damages for Breach of Contract Endangering Public Health

(Hanford et al. v. Connecticut Fair Association, Inc. (Conn.), 103 Atl. R. 838)

The Supreme Court of Errors of Connecticut holds that there was no error in overruling a demurrer to the defendant's answer in this action brought by the plaintiffs to recover damages for an alleged breach of contract for a baby show to be promoted and managed by the plaintiffs. The court says that each of the two parties was to furnish and do such things as were deemed essential to attract a number of babies to the grounds and buildings controlled by the Fair Association. Presumably the babies were in some manner to be exhibited, and it was expected that at least 120 prizes would be awarded for such excellent and desirable traits as the babies might be adjudged to possess on an inspection and comparison. The defendant in its answer alleged that at the time the disease popularly known as infantile paralysis was epidemic in the city and throughout the state, being so widespread and so serious as to make assemblies of children, and especially young children, highly dangerous to the health of the children of the community, and by reason of these facts it was contrary to public policy to hold a baby show of the nature and at the time provided for in the alleged contract; that the defendant notified the plaintiffs that it wished to cancel the contract for that reason, and thereafter the contract was definitely and finally canceled for the reason named.

It was conceded that if a contract is contrary to public policy it is void. As it was admitted that the holding of a baby show under the circumstances narrated would be highly dangerous to the health of the community, it must follow that such a show would be contrary to public policy. This court is now considering the sufficiency of an allegation, not how that allegation could be proved. The allegation that the baby show would be dangerous to public health might be avoided by the plaintiffs by alleging, if such was the fact, that effectual precautions had been taken to prevent the communication of the disease from one child to another, or by setting up any other fact making it clear that no harm could result to the public from the show. But the court cannot regard the averment that the assemblage of a number of children as proposed would be "highly" dangerous to the public health other than as a fact which the plaintiff must answer, either by denial or matter in avoidance.

The court will not require the performance or award damages for a breach of a contract in which the public has so great an interest as the preservation of health, if the health is in fact endangered, any more than it would require one to be performed the tendency of which was immoral, or which interfered with the right of every one to earn a livelihood by a lawful occupation. The plaintiffs in their brief relied on certain cases which appeared to be actions brought by schoolteachers to recover salary when the schools had been closed by reason of the prevalence of some contagious or infectious disease in the community. But there is a difference between a contract to teach school and one to promote and manage a baby show. Teaching proper subjects can never be unlawful or contrary to public policy, though the assemblage of a number of children in one room might become very harmful. The teacher has usually no control over the attendance in his school. The baby show, however, would be highly dangerous to health, and this was just what the parties had agreed to promote and carry out for their mutual profit.

The plaintiffs contended that the defendant's undertaking was absolute and unqualified. But even though in this case the promise was absolute and unqualified, yet neither party contemplated that the show would be held if the public health would be endangered thereby, and therefore the contract impliedly contained a provision to that effect.

Two members of the court, however, think that the plaintiff's demurrer to the defendant's answer ought to have been sustained on the ground that it did not appear that the holding of this baby show had been prohibited by an order of the county or state health officials.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

January, 1919, **157**, No. 1

Four Cases of Perforation in Cancer of Stomach. J. Friedenwald. and A. McGlannan.—p. 1.
*Prognosis in Heart Disease in Relation to Auricular Fibrillation and Alternation of Pulse. P. D. White.—p. 5.
Modern Aspect of Treatment of Ulcus Ventriculi. I. W. Held and M. H. Gross.—p. 8.
*Delay in Treatment of Cancer. C. E. Farr.—p. 34.
Anatomic Changes and Histogenesis in Gastritis Granulomatosa Fibroplastica. G. E. Armstrong and H. Oertel.—p. 35.
*Syphilitic Aortitis: Its Early Recognition. G. E. Brown.—p. 41.
*Adenocarcinoma of Intestine of Unusual Generalization and with Peculiar Cystic Metastases. C. T. Crowdy.—p. 54.
*Value of Ventricular Puncture for Early Diagnosis and Serum Treatment of Posterior Basilar Meningitis. A. Zingher.—p. 58.
Primary Carcinoma of Gall-Bladder: Analysis of Twenty-Three Cases. F. Smithies.—p. 67.
Relation of Pain in Gastric and Duodenal Ulcer to Muscular Activity of Stomach. J. Homans.—p. 74.
*Anatomic Points Determining Direction of Needle and Proper Route For Lumbar Puncture in Children and Adults. J. C. Regan.—p. 83.
*Physiologic Considerations in Immediate Treatment of Dangerous Hematemesis. W. A. Bastedo.—p. 99.
*Diagnosis of Mitral Stenosis. E. H. Goodman.—p. 112.

Prognosis in Heart Disease.—Three groups of 100 patients each, showing (1) pulsus alternans, (2) auricular fibrillation and (3) normal rhythm, have been studied by White with relation particularly to prognosis. A large number of each group has been followed for two or three years and the condition determined at the end of that time. Seventy-four per cent. of the patients with pulsus alternans, 48 per cent. with auricular fibrillation and 47 per cent., with normal rhythm have died. The higher grades of alternation of the pulse carry with them an especially high mortality, nearly 100 per cent., within three years. The cases with auricular fibrillation complicated by aberrant ventricular complexes seem to be very fatal (100 per cent. in the present series); those cases with ectopic ventricular contractions complicating the fibrillation have a mortality almost as high as the total of alternation, while uncomplicated auricular fibrillation has a surprisingly low mortality percentage.

Delay in Treatment of Cancer.—Of 103 cases of cancer considered in Farr's paper the average period from the onset of symptoms to the first consultation with a physician was 3.19 months, and the average period from this time until the

entrance into the hospital was 8.7 months. This gives a total of 11.89 months, practically a year, in the average cases, from the onset of symptoms to the entrance into the hospital. Of 101 of these cases classified, forty-four patients received good advice from the first physician consulted, forty-seven did not. Farr points out that even if every allowance is made for misunderstanding and ignorance on the part of the patient, the showing is appalling. Obviously, in the average case a considerable period of time is lost between the onset of symptoms and the first visit to a physician, and his advice is wrong in considerably more than half the cases.

Syphilitic Aortitis: Its Early Recognition.—The five cases reported by Brown show the frequency with which specific aortitis is confused with pulmonary disease, and that specific aortitis is not always a late syphilitic manifestation, in one case probably six to eight months after infection. Practically all physical signs may be present and the diagnosis will rest on substernal distress, a positive Wassermann test and the therapeutic test. A positive Wassermann reaction means syphilis, and even in the absence of all outward manifestations of syphilis, Brown says that the aorta should be suspected and active treatment instituted. A negative Wassermann test does not rule out specific aortitis, hence, a luetin test should be performed and the effect of treatment should be studied. When the more gross pathologic changes have taken place, treatment usually is ineffective.

Adenocarcinoma of Intestine with Metastases.—The metastases in the intestinal tract in Crowdy's case had some resemblance to pneumatosis cystoides intestini or intestinal gaseous cysts of swine and man. Metastases were also found in the peritoneal lymph glands, omentum, and hilum of the liver, indicating a dissemination through the peritoneal lymphatics and in this way resembling some cases of tuberculosis. The primary tumor apparently was of intestinal origin.

Ventricular Puncture in Diagnosis and Treatment of Meningitis.—Zingher urges that a prompt ventricular puncture is indicated in cases that show progressive meningeal symptoms and give a dry tap on lumbar puncture. Even less pronounced meningeal symptoms, such as slight but definite bulging of the anterior fontanel, tremors of the extremities and fever should lead to a ventricular puncture in cases that have given repeated dry taps in the hands of an experienced operator. Such early ventricular punctures are of vital importance in the successful treatment of cases of posterior basilar meningitis. In adults the persistence or aggravation of the clinical symptoms, associated with a persistently cloudy spinal fluid, which has become sterile after two or three injections of antimeningitis serum, often indicates the necessity for a ventricular puncture. In these patients, lumbar puncture may show a sufficient amount of spinal fluid; but the outlet from the ventricles is closed off, and the serum injected into the spinal canal does not reach these infected regions.

Ventricular punctures should be repeated daily or every other day; 20 to 50 c.c. of fluid are withdrawn and 15 to 30 c.c. of serum injected by gravity. The serum should be warmed to body temperature and a smaller amount always reinjected than the amount of fluid withdrawn. The interval of time between the punctures and the total number of punctures will depend on the rapidity in the reaccumulation of the fluid, as indicated clinically by the reappearance of a bulging anterior fontanel and on the result of the bacteriologic culture of the ventricular fluid. A lumbar puncture should be made at the time the patient is discharged from the hospital in order to determine the reestablishment of the communication between the ventricular cavities in the brain and the subdural space in the spinal canal. If the baby is breast fed every effort should be made to have the breast feeding continued while the patient remains in the hospital. Occasionally the diagnosis may be assisted in cases giving a dry tap, and before deciding on a ventricular puncture, by making a culture of the nasal discharge and finding the meningococcus present. Zingher states positively that cases of posterior basilar meningitis should be followed up for a period of years to determine the final outcome in those who recover after ventricular punctures and injections of antimeningitis serum.

Proper Method of Lumbar Puncture in Children and Adults.—Regan advises the median route for puncture in both children and adults. By reason of the structure of the lumbar spines in childhood, the only proper method of introducing the needle is in an exactly perpendicular direction to the spine, following in this way the direction of the spinous processes themselves. Any upward inclination imparted is unnecessary and increases proportionately the dangers of a "dry tap." This method of inserting the needle is applicable to children below the age of puberty.

In the adult, as a general rule, if the back can be well flexed, the needle should always be introduced directly perpendicular to the spine at an angle of 90 degrees. This direction will succeed except in a minor percentage of cases. If bone is encountered the instrument is then directed obliquely upward at an angle of 60 to 45 degrees, and this will always be followed by the disappearance of the bony obstruction and the entrance of the needle into the subarachnoid space, except in rare instances. When there is slight opisthotonos and the back cannot be flexed well or the lower limbs drawn up well, owing to rigidity, the spinous processes cannot be separated, and a perpendicular puncture at an angle of 90 degrees is commonly unsuccessful. Under such circumstances it is advisable to insert the needle in an upward direction, usually at an angle of 60 to 45 degrees. In the aged, spinal flexion is more difficult to obtain, hence it is usually advisable in such patients to give the instrument a decided direction upward.

Treatment of Dangerous Hematemesis.—The treatment advised by Bastedo is to have the patient very quiet, lying down, with head low, with a light ice-bag over the stomach and with plenty of fresh air; avoid unnecessary manipulation; give a hypodermic of morphin sulphate, 0.015 gram (one-fourth grain), with strychnin sulphate, 0.002 to 0.003 gram (1/30 to 1/20 grain). Immediately after vomiting give by mouth a solution of thromboplastin, kephalin, coagulen or epinephrin. In a case not of the portal congestion type, if the stomach remains distended and the bleeding seems to persist, perform lavage with tepid water, and follow this by passing in a solution of epinephrin, thromboplastin, kephalin or coagulen through the tube. In portal congestion cases avoid lavage. Prepare early for transfusion, and as soon as there are indications for it transfuse with careful watchfulness. If there is severe exsanguination, bandage legs and arms, raise the foot of the bed, bandage and put weights on the abdomen, keep up body warmth, and furnish fluid intravenously, subcutaneously and by rectum. If transfusion cannot be done, give Locke's or Ringer's solution containing 5 per cent. of acacia intravenously. Finally, have a surgeon at hand to share the responsibility, but do not operate.

To prevent recurrence inject subcutaneously every six or twelve hours for one or two days, 10 to 50 c.c. of human, rabbit or horse serum, or a solution of coagulose or euglobulin, or a single dose of 100 to 500 c.c. of human serum; or inject intramuscularly a solution of coagulen, thromboplastin or kephalin. If recurrence happens, resort to surgery, if necessary, preceding the operation by transfusion, (*a*) after the bleeding has stopped, or (*b*) if the bleeding continues but has become persistently small in amount.

Diagnosis of Mitral Stenosis.—In all thirty-six cases of mitral stenosis were diagnosed from a draft increment of about 15,000, twenty-four being "pure" cases and twelve associated with insufficiency. Of etiologic factors in the twenty-four cases of pure stenosis examined by Goodman, "rheumatic fever," chorea, tonsillitis and growing pains are the most important. In some instances, "rheumatic fever," chorea and tonsillitis appeared together. Cyanosis was observed fourteen times, pallor four times and in six cases the appearance was negative as far as these two phenomena were concerned. A presystolic thrill ending in the characteristic systolic shock was felt twenty-two times. In all of the twenty-four cases a murmur was heard, sometimes not in the erect posture but usually in the recumbent position, and always best in the ventral decubitus. A snappy first sound was heard typically nineteen times; in the five cases in which it was not heard a systolic murmur, accidental or without

significance, muffled it. The second pulmonic sound was found to be accentuated over the normal fifteen times; in the nine cases not accentuated a diastolic murmur was heard. Hypertrophy of the heart was found in four cases. Irregularities were found but once, and this was an extrasystolic arrhythmia. The systolic blood pressure was sometimes quite high but the average of the twenty-four cases was 132 mm. Hg. The diastolic pressure was 78.

American Journal of Ophthalmology, Chicago

January, 1919, **2**, No. 1

Spindle-Like Formations in Inflamed Uveal Tissue of Sympathetic Ophthalmitis. K. Ichikawa.—p. 1.
Congenital Tumor of Cornea of Doubtful Classification. H. H. Stark.—p. 5.
Determination of Minimum Light Sense and Retinal Dark Adaptation with Presentation of a New Type of Photometer. J. W. Downey, Jr.—p. 13.
Common Changes in Regular Astigmia and Their Causes. E. Jackson.—p. 21.
Hypermetropia Responsible for Heterophoria Astigmatism and Myopia. S. M. Payne.—p. 30.
Treatment of Asthenopia in Children. E. R. Williams.—p. 39.
Astigmatism. J. Green, Jr., and W. F. Hardy.—p. 43.
Reconstruction and Re-Education of Disabled Soldiers and Sailors. C. A. Wood.—p. 47.
Efficient Lamp for Eye Operations. F. H. Verhoeff.—p. 53.
Quinin Amblyopia from Rectal Administration. C. S. G. Nagel.—p. 54.
Eye Lesions of Influenza. E. Stieren.—p. 55.

American Journal of Physiology, Baltimore

January, 1919, **48**, No. 4

Studies on Submaxillary Gland. Electrical Deflections. R. Gesell.—p. 411.
*Id. Automatic and Bloodless Method of Recording Volume-Flow of Blood. R. Gesell.—p. 428.
Id. Some Factors Controlling Volume-Flow of Blood. R. Gesell.—p. 438.
Id. Comparison of Effects of Hemorrhage and Tissue-Abuse in Relation to Secondary Shock. R. Gesell.—p. 468.
Id. An Automatically Filling and Recording Spirometer. R. Gesell.—p. 507.
Effect of Osmotic Pressure on Excitability of Nerve. R. Shoji.—p. 512.
Luminescence of Watasenia Scintillans (Berry). R. Shoji.—p. 534.
*Experimental Mammalian Polyneuritis Produced by a Deficient Diet. C. Voegtlin and G. C. Lake.—p. 558.

Method of Determining Volume-Flow of Blood.—An automatic and bloodless method of the volume-flow of blood is described by Gesell. The blood, without coming in contact with any foreign substance, is measured as it flows through a large vein, on its way to the heart. This vein, serving as a reservoir, is placed in the trough of the volume-flow recorder. By means of solenoids and electrical contacts operating a cut-off and an emptying-plate, the vein automatically fills and empties, the blood flowing on to the heart. The frequency of filling and emptying varies in direct proportion to the volume-flow of blood and is recorded by a signal magnet in circuit with one of the solenoids. The advantages of the method are said to be: (*a*) by calibration of the vein the procedure is made quantitative without the usual direct measurements of the blood; (*b*) it is automatic and therefore requires very little attention; (*c*) it is bloodless and therefore does not require the use of anticoagulants, and (*d*) it may be used over long periods of time without affecting the general condition of the animal.

Experimental Mammalian Polyneuritis.—The investigation reported on by Voegtlin and Lake aimed primarily at the production of deficiency polyneuritis in animals which were closely related to man and which could be used to better advantage in studies on experimental polyneuritis and the physiologic function of the antineuritic vitamin. Experiments were carried out on dogs, cats and albino rats. Cats seemed to respond to a deficient diet with the greatest regularity and for this reason most of the work dealt with this species. The authors succeeded in producing polyneuritis in cats and dogs as the result of an exclusive dietary of lean beef which was heated for three hours at 120 C. in the presence of alkali (sodium carbonate). Proof of this statement is furnished by the symptomatology, treatment and pathology of the disease noted, which are essentially those characteristic of beriberi. The authors are convinced that the disease is due to a deficiency of the diet in antineuritis substance and not to a deficiency in the other essential dietary components (amino acids, fat soluble vitamin, etc.). Exposure of the beef for three hours to a temperature of 120 C., without the previous addition of alkali, does not completely destroy the antineuritic power of this food. It is, therefore, concluded that the ordinary preparation of meat for human consumption does not lessen its food value in this respect.

American Review of Tuberculosis, Baltimore

January, 1919, **2**, No. 11

Stereoroentgenograms of Injected Lung as Aid to Study of Lung Architecture. W. S. Miller.—p. 659.
Study of Pulmonary and Pleural Annular Roentgenographic Shadows. H. L. Sampson, F. H. Heise and L. Brown.—p. 664.
*Treatment of Diabetes Complicating Pulmonary Tuberculosis by Allen Fasting Method. H. R. M. Landis, E. H. Funk and C. M. Montgomery.—p. 690.
*Treatment of Laryngeal Tuberculosis by Reflected Condenced Sunlight. C. W. Mills and A. M. Forster.—p. 699.
Pulmonary Conditions Simulating Tuberculosis. J. H. Elliott.—p. 707.

Treatment of Diabetes with Tuberculosis.—The occurrence of diabetes and glycosuria in tuberculosis is, as a general proposition, considered comparatively infrequent by various writers. Among 31,834 cases of tuberculosis, collected from twenty-five tuberculosis sanatoria and hospitals in various parts of the United States, there were 101 (about one third of 1 per cent.) cases of glycosuria and fifty-one (about one sixth of 1 per cent.) cases of diabetes. Landis and his associates are convinced that some of the cases classed as glycosurias were undoubtedly diabetes, so that the percentage of diabetics may be assumed to be between one third and one sixth of 1 per cent. of all these tuberculous cases. The combination of diabetes and tuberculosis in the past was sufficient to render an almost hopeless prognosis. The treatment was unsatisfactory because in most instances the tuberculosis was considered paramount and the diabetes less important. Today it is known that it is vitally important to control the diabetes first of all, at the same time instituting other measures for the tuberculosis, such as rest, etc., as are compatible with the diabetic treatment. In tuberculosis, where so much is dependent on the ability to take and assimilate a diet of maximum value, the correction of any "specific deficiency in the power of assimilating food" becomes of first importance. The authors believe that it is absolutely necessary to accomplish this before it is possible to treat the tuberculosis effectively.

Twelve cases of pulmonary tuberculosis associated with diabetes were carefully studied. One case was incipient, five were moderately advanced, and six were far advanced. One revealed questionable activity, three slight activity, two moderate activity and six considerable or marked activity. The prognosis in six cases was doubtful and in six unfavorable. In seven of the twelve cases fasting was practiced at the start, in two for five successive days, in four for three successive days, and one for two days before the urine became sugar free. In all of the cases except one, fast days were ordered at various times during the course of the treatment. In five of the twelve cases the urine could be rendered sugar free on a standard carbohydrate-free diet plus various additions to this diet, including a moderate amount of carbohydrates. One patient, however, could be kept sugar free only by ultimately resorting to fasting. Nine of the patients exhibited amelioration in symptoms. In five of the nine cases just mentioned physical signs did not change while the patients were under observation.

As these results stand the authors say that it is possible for patients with tuberculosis and diabetes to partake of a considerably restricted diet over a period of some weeks and still show an increase in weight and strength, a fall in temperature, and a lessening of respiratory symptoms. Rest in bed, rather than exercise, as is advised in ordinary diabetics, is necessary because of the tuberculosis; and special care is necessary in order not to increase the fats too rapidly in the desire to bring up the caloric value of the diet, for fear of producing acidosis, as in several of our cases. The treatment is applicable in the presence of recurring hemoptysis, and in

every case of tuberculosis of the lungs unless the patient is obviously hopelessly ill with the pulmonary lesion, in which case, the institution of the antidiabetic treatment would add only further discomfort.

Sunlight Treatment of Laryngeal Tuberculosis.—Mills and Forster are very enthusiastic over heliotherapy in laryngeal tuberculosis. The ultraviolet or actinic rays of the spectrum are the ones that produce the beneficial results. These are the chemical rays, the ones that cause tanning of the skin, and that have a bactericidal action. One of their patients worked out the details of this method. He preferred as being most efficient a reflector made of a metallic alloy of aluminum and magnesium. This alloy would reflect a very high percentage of the ultraviolet rays and at the same time absorb many of the heat rays, just the reverse of glass mirrors. The patient sits with his back to the sun. The sunlight is first reflected from a concave metallic mirror into the mouth of the patient, and on a metallic laryngeal mirror held in proper position in the throat. A glass mirror is used to view the larynx, for the purpose of observing that the light is being properly directed. Both the metallic condensing mirror and the glass observation mirror are attached by adjustable joints and supports to a frame, which can be conviently attached to the back of the ordinary chair placed in front of the patient. The patient will usually find it necessary to hold the tongue forward with a gauze handkerchief and must also have a glass of hot water at hand for heating the laryngeal mirror exactly as in ordinary laryngoscopic work. After a little practice most patients readily learn to observe their own larynx and to direct the light on the lesions.

Under the use of this method Mills and Forster have seen obstinate ulcers heal in some cases, infiltrations subside, painful lesions become painless, in fact a steady cleaning up and healing of tuberculous laryngeal lesions. They have not noted any bad effects from the use of this method. Occasionally at the beginning of treatment, they have seen infiltrations break down into small ulcerations, which then proceeded to heal under continued use of the light.

Annals of Medical History, New York

December, 1917, **1**, No. 4

First Printed Documents Relating to Modern Surgical Anesthesia. W. Osler.—p. 329.
Byzantine Medical Fragments. C. Singer.—p. 333.
Legislative and Administrative History of Medical Department of U. S. Army During Revolutionary Period (1776-1786). W. O. Owen.—p. 342.
New York Medical College 1782-1906. A. Jacobi.—p. 368.
Studies in Paleopathology. General Consideration of Evidence of Pathological Conditions Found Among Fossil Animals. R. L. Moodie.—p. 374.
Plague Tractates. D. W. Singer and R. Levy.—p. 394.

Boston Medical and Surgical Journal

Jan. 30, 1919, **180**, No. 5

Industry and Medicine. S. D. Hubbard.—p. 119.
Incidence of Venereal Diseases Among 6,086 men at Camp A. A. Humphreys, Va. I. W. Brewer.—p. 122.
Recent Influenza Epidemic. E. A. Locke, G. E. Ronne and H. Lande.—p. 124.

Georgia Medical Association Journal, Atlanta

December, 1918, **8**, No. 8

Acidosisin Relation to Infections of Air Passages. Report of Forty Cases. A. J. Waring.—p. 151.
Mental Disturbances and Syphilis. L. M. Gaines.—p. 156.
Rôle of Surgery in Digestive Disturbances; Cases. C. W. Roberts.—p. 160.
Ductless Glands in Relation to Eye. E. S. Osborne.—p. 164.
Diabetes and Allen Treatment. W. W. Blackman.—p. 166.

Indiana State Medical Association Journal, Fort Wayne

Jan. 15, 1919, **12**, No. 1

Relation of Pulse Pressure and Kidney Function to Operative Prognosis. J. O. Polak.—p. 1.
Management of Eye Cases by General Practitioner. A. L. Marshall.—p. 4.
Anesthesia in Curriculum and Clinic. W. D. Gatch.—p. 6.
*Cesarean Section and Obstetric Operations Under Nitrous Oxid-Oxygen Anesthesia. E. I. McKesson.—p. 8.

Obstetric Operations Under Nitrous Oxid-Oxygen Anesthesia.—Nitrous oxid and oxygen is looked on by McKesson as being an ideal anesthetic for obstetric operations. The advantages are: (1) Its transient effect, when removed, permits almost immediate resumption of normal labor; (2) its lack of depression on uterine and other muscle when properly administered; (3) its safety to mother and child; (4) the means at hand for perfusing the child with oxygen through the mother while the cord pulsates, factors which, McKesson says, should decrease fetal and maternal mortality and morbidity in operative obstetrics.

Iowa State Medical Society Journal, Des Moines

Jan. 15, 1919, **9**, No. 1

Epidemiology of Pneumonia. J. H. Hamilton.—p. 4.
Experimental Study of Intestinal Obstruction. J. T. McClintock, L. R. Dragstedt and C. A. Dragstedt.—p. 8.
Diagnosis and Treatment of Peptic Ulcer. J. T. Strawn.—p. 11.

Journal of Biological Chemistry, Baltimore

January, 1919, **37**, No. 1

Phosphorus and Calcium Metabolism as Related to Milk Secretion. E. B. Meigs, N. R. Blatherwick and C. A. Cary.—p. 1.
Physical Properties and Chemical Composition of Human Amniotic Fluid. D. Uyeno.—p. 77.
*Urea Formation by Placenta. E. S. Hammett.—p. 105.
Maximum Production of Glutamine by Human Body as Measured by Output of Phenylacetylglutamine. C. P. Sherwin, M. Wolf and W. Wolf.—p. 113.
Behavior of Sudan III In Animal Organism. B. E. Read.—p. 121.
Globulins of Jack Bean, Canavalia Ensiformis. J. B. Sumner.—p. 137.
Do Seedlings Reduce Nitrates J. Davidson.—p. 143.
Globulin of Cocoanut, Cocos Nucifera. C. O. Johns, A. J. Finks and C. E. F. Gersdorff.—p. 149.
Supplementary Relationships Between Proteins of Certain Seeds. E. V. McCollum, N. Simmonds and H. T. Parsons.—p. 155.
*Case of Metabolism in Multiple Exostoses. V. K. Krieble and O. Bergeim.—p. 179.
*Vitamins in Green Foods. T. B. Osborne and L. B. Mendel.—p. 187.
Influence of High Temperatures and Dilute Alkalies on Antineuritic Properties of Foods. A. L. Daniels and N. I. McClurg.—p. 201.

Urea Formation by Placenta.—It is evident from Hammett's observations that the placenta can form urea under certain circumstances. The processes leading up to this product are in question. Whatever the source of the urea found to be formed by placenta tissue, these results give evidence that this organ, as well as being excretory in function, is also actively concerned in the preparation of the nitrogenous by-products of the fetus for excretion. It is Hammett's idea that the fetus is only faintly able, if at all, to perform for, of, and by itself the functions of preparing its nourishment in assimilable form, or of breaking down its by-products into compounds ready for excretion; and that the placenta is interposed between mother and fetus to remove as far as possible these extra burdens from the maternal organism.

Metabolism in Multiple Exostoses.—A study was made by Krieble and Bergeim of the metabolism in a case of multiple exostoses. A loss of nitrogen was noted and ascribed, in part, to the associated hypermotility of the intestine. A retention of sulphur was observed and attributed to storage in the growing cartilage. The retention of phosphorus, calcium, and magnesium appeared to be within normal limits as did also the percentage excretion of these elements by way of the urine. These findings do not support the view of a relationship of this disorder to rickets or to any primary disturbance of general metabolism.

Vitamins in Green Foods.—Osborne and Mendel suggest that the green vegetables supply an important addition to the diet of man because the staples such as cereals, meats, potatoes, fats and sugar probably furnish too small an amount of either of these vitamins to meet fully the requirements of an adequate dietary. Therefore, care should be taken not to reduce greatly the quantity of green vegetables customarily eaten until more is learned about the actual requirements for these food factors and their relative abundance in the commonly used vegetables and green foods. Only then will it be safe to apply the results obtained in the laboratory to attempts to effect economies in the use of these relatively expensive food products.

Journal of Immunology, Baltimore

November, 1918, **3**, No. 6

Active Immunity in Experimental Poliomyelitis. H. L. Abramson and H. Gerber.—p. 435.
Experimental Pollinosis. Preliminary Report. H. L. Ulrich.—p. 453.
*Prompt Macroscopic Agglutination in Diagnosis of Glanders. O. R. Povitzky.—p. 463.

Agglutination in Diagnosis of Glanders.—Povitzky has worked out a modification by which an agglutination reaction, clear cut in appearance, can be obtained in less than two hours with positive serum in dilutions up to 1:2,000 or higher. The strain of *B. mallei* used was isolated from a case of human glanders. The medium which has given the most satisfactory results is potato-glycerin-veal agar that is 2.5 per cent. acid to phenolphthalein. The test has been found valuable in the routine examination of horses. With this test nearly all early and acute cases can be detected and thus the spread of the disease can be prevented. The whole technic is described in detail.

Journal of Medical Research, Boston

November, 1918, **39**, No. 2

*Case of Mucor Infection. H. C. Ernst.—p. 143.
*Study of Experimental Organizing Pneumonia. A. B. Wadsworth.—p. 147.
*Brom Cresol Purple and Litmus as Indicators for Classification of Tubercle Bacilli. L. Frothingham.—p. 153.
Studies of Uranium Poisoning. Toxicity of Certain Water-Insoluble Salts of Uranium. H. T. Karsner, and S. P. Reimann.—p. 157.
Id. Solubility of Uranium Oxide in Artificial and Human Gastric Juice. H. T. Karsner, S. P. Reimann and S. C. Brooks.—p. 163.
Id. Question of Renal Tissue Affinity for Uranium. H. T. Karsner, S. P. Reimann and S. C. Brooks.—p. 169.
Id. Relation of Acid Intoxication to Nephritis. H. T. Karsner, S. P. Reimann and S. C. Brooks.—p. 177.
*Behavior of Organs After Transplantation in Rat; Power of Resistance of Constituents of Various Organs. L. Loeb.—p. 189.
*Simple Method of Carrying Meningococcus Cultures. J. Bronfenbrenner and M. J. Schlesinger.—p. 217.
Effects of Quartz Ultra-Violet Light on Rate of Division of Paramecium Caudatum. W. T. Bovie and D. M. Hughes.—p. 223.
Effects of Fluorite Ultra-Violet Light on Rate of Division of Paramecium Caudatum. D. M. Hughes and W. T. Bovie.—p. 233.
An Approximation of Value of Absorption Index of Fluorite Rays in Protoplasm. W. T. Bovie.—p. 239.
Localization of Physiological Effects of Radiation Within the Cell. W. T. Bovie.—p. 251.
*Micro Plate for Study of Bacterial Activity. J. Bronfenbrenner and M. J. Schlesinger.—p. 267.
Physiologic Action of Radiation. W. T. Bovie.—p. 271.

Case of Mucor Infection.—The history of this patient was suggestive of pulmonary tuberculosis, but examination of the sputum disclosed a mucor. The man was a farmer, hence Ernst suggests that the infection may have been occupational as has been suspected in other cases; that is, from corn, on which the mucor finds a favorable medium for growth. The infectious character of the organism is shown by the appearance of a slow chronic abscess in the peritoneal wall of a guinea-pig, following an injection with an emulsion from a pure culture of the mucor.

Experimental Organizing Pneumonia.—Investigations were made by Wadsworth for the purpose of ascertaining, if possible, why one case of pneumonia should resolve, another continue unresolved, and still another undergo organization. Inasmuch as secondary infection might be conceived as a determining factor in organizing pneumonia, Wadsworth made a study of the lesions of human cases of organizing pneumonia to determine, so far as was possible by morphological and cultural study alone, the bacterial factors concerned. Following this, a series of experimental studies in dogs by tracheal injection of the lungs were made of the action of the pneumococcus alone, of the staphylococcus alone, and then especially of the action of the pneumococcus associated with the staphylococcus. The pneumococcus in pure culture gave rise in the dog to exudative processes which in all respects resembled those of man, and which, like those of man, underwent complete resolution leaving little or no trace of the disease. The staphylococcus in pure culture gave rise to circumscribed areas of bronchopneumonia in which resolution was delayed or was followed by some interstitial bronchial pneumonia. It was only in the diffuse exudative lesions of the dog's lung incited by the pneumococcus and the staphylococcus together that resolution was regularly delayed and typical lesions of intra-alveolar organization were seen.

Differentiation of Tubercle Bacilli.—From Frothingham's experiments it seems that brom cresol purple and litmus may be valuable indicators for differentiating types of tubercle bacilli.

Organs After Transplantation.—An intensive study was made by Loeb of many kinds of tissue and his findings are very interesting. The original article should be consulted. On the whole, Loeb says, the simpler structures survive after transplantation. The transplantation represents, in some respects, a struggle for existence between tissues, and this struggle leads to a selection of the more resistant tissues. This selective action is mainly responsible for the ultimate structure of transplants.

Method of Carrying Meningococcus Cultures.—Bronfenbrenner and Schlesinger succeeded in rendering liver-agar uniformly suitable for the growth of meningococcus cultures. The preparation of the medium is as follows: (1) Make a liver infusion using 1,000 gm. of fresh beef liver to every 1,000 c.c. of water (double strength). Collect the extract through a single layer of cheesecloth. Boil for five minutes, stirring continuously. Do not adjust the reaction. Strain through a single layer of cheesecloth covered with a thin layer of cotton. Sterilize at 10 pounds' pressure for ten minutes. (2) Make a three per cent. agar solution in water. Filter through cotton. Add 2 per cent. peptone and 1 per cent. sodium chlorid. Do not adjust the reaction. Sterilize at 15 pounds for thirty minutes. Primary meningococcus colonies grow very rapidly on such a medium, which is very important in searching for carriers. Pure cultures may be kept alive on slopes of this medium for several weeks by inoculating the water of condensation and tilting the tube every day or two.

Micro Plate for Bacteria Cultures.—In order to reduce to a negligible quantity the amount of medium used, Bronfenbrenner and Schlesinger substituted cultures in drops of medium for test tubes. This procedure does away with the necessity of using individual tubes for each test. The result is a great economy of time and labor formerly spent in washing, plugging, filling and sterilizing glassware. Furthermore, the micro plate simplifies the manipulations involved in a number of bacteriological and biochemical tasks to such a degree that even a slightly trained laboratory assistant can perform reliably a greater volume of work in a given time than a highly trained worker can do by means of "standard" technic.

Maine Medical Association Journal, Portland

January, 1919, **9**, No. 6

Treatment of Peptic Ulcer; Report of Fifty Cases. R. F. Chase.—p. 133.
Chronic Gastric Lesions. B. L. Bryant.—p. 144.

Medical Record, New York

Feb. 1, 1919, **95**, No. 5

*Medical vs. Surgical Treatment of Cancer. L. D. Bulkley.—p. 177.
*Oxygen Tension in Its Relation to Meningococcus. J. H. St. John.—p. 184.
Possibility of Protein Split Product Poisons Being Formed in Market Milk. J. M. W. Kitchen.—p. 186.
Deaths By Poisons in Cook County, Illinois, During Period 1905-1917. W. D. McNally.—p. 189.
Mind and Its Abnormalities. B. Lemchen.—p. 192.

Medical Treatment of Cancer.—Abstracted in THE JOURNAL, Jan. 25, 1919, p. 310.

Oxygen Tension in Its Relation to Meningococcus.—The experiments reported on by St. John suggest that the retention of moisture in the medium used for the cultivation of the meningococcus is probably a more important factor than the oxygen content of the incubation atmosphere. It is not necessary, however, to cultivate the meningococcus in closed containers, as the same end-result is obtained by giving more consideration to the water content of the medium and to the prevention of surface evaporation during incubation. This latter may be accomplished by exposing the incubator air to large surfaces of water placed in shallow pans. This simple

procedure has been adopted by the Army Medical School, and better cultural results are obtained.

Nebraska State Medical Journal, Norfolk

January, 1919, **4**, No. 1

Injuries of Nervous System. G. A. Young.—p. 1.
Traumatic Neuroses. F. E. Coulter.—p. 4.
Improvements in War Surgery of Nervous System as Applied to Civil Practice. J. E. Summers.—p. 9.
Some "Whys" of Conjugally Conjugated Syphilis of Nervous System. S. G. Burnett.—p. 14.
Roentgen Ray in Diagnosis of Bone Pathology. A. P. Overgaard.—p. 18.
Roentgen Diagnosis of Intrathoracic Lesions. C. H. Ballard.—p. 23.

New Orleans Medical and Surgical Journal

January, 1919, **71**, No. 7

Local Anesthesia for Operations for Goiter. A. A. Keller.—p. 305.
Epidemic Meningitis. Types of Meningococci and Transmission of Disease. C. W. Duval.—p. 312.
Diagnosis Method, Treatment and Prophylaxis of Malaria as Conducted in the Sanitation of Brioni, Istrie (Austria), in 1899 to 1902. D. Rivas.—p. 322.

United States Naval Medical Bulletin, Washington

January, 1919, **13**, No. 1

Heart Sounds and Their Value. H. A. Hare.—p. 1.
Eliminating Epileptic from Navy. L. E. Bisch.—p. 5.
*Use of Serum in Lobar Pneumonia. E. W. Gould, and M. Shaweker.—p. 16.
Diagnosis and Treatment of Pneumonia and Empyema at U. S. Naval Hospital, Newport, R. I., F. A. Asserson and W. L. Rathbun.—p. 26.
*Development of Specific Serum Therapy in Pneumonia. W. R. Redden.—p. 35.
Flat Foot, New Statement of Old Truth. L. R. G. Crandon.—p. 43.
Present Status of Treatment of Flat Feet. S. B. Burk.—p. 46.
Ear Protection. G. B. Trible, and S. S. Watkins.—p. 48.

Use of Serum in Lobar Pneumonia.—Gould and Shaweker believe that they have seen some good results from the use of serum in the Type I cases of pneumonia, but they do not overestimate the results. In all cases the serum was given by the gravity method in high dilution at or slightly above the patient's temperature. The apparatus used is described in detail.

Development of Specific Serum Therapy in Pneumonia.—Redden claims that the etiologic factor in 98 per cent. of all lobar pneumonias is the pneumococcus. Eighty per cent. fall serologically into three groups called fixed Types I, II, III. Two is further subdivided into a, b and x. The remaining 20 per cent. is called Group IV and is made up of numerous distinct races. Group IV may be found in 80 per cent. of normal mouths. But the fixed types are found only in the mouths of those recently ill with such a type or in one who has been in contact with such a type case. This points to carriers of the fixed types as the chief epidemiologic factor. About 38 per cent. of all cases are Type I; about 30 per cent. of all cases are Type II; about 11 per cent. of all cases are Type III. Against Type I an immune serum has been produced which reduces mortality by three fourths. Against Type II a less potent serum which reduces mortality by about one half has been produced. The authors insist that all cases of pneumonia should be typed as early as possible in order to give patients the benefit of antiserum, if of Type I or II. Practically all cases which fall into these two groups can be given serum without danger. Even if one of the Type I cases shows sensitiveness to the serum, an attempt should be made to desensitize in order to make Serum I available. Serum should be given as early as possible and in 100 c.c. amounts at eight-hour intervals for at least three doses, intravenously.

Probably the action of the growing pneumococcus plays an important part in producing the local lesion. Grouping not only makes serum therapy available but aids in prognosis, the order of increasing mortality being IV, I, II, III. Experience points to crowded quarters, exposure to severe weather, and devitalizing labor as important predisposing factors in the development of the disease.

Washington Medical Annals

January, 1919, **18**, No. 1

Case of Acquired Syphilis in Boy of 13 Years. R. M. LeComte.—p. 4.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, Journal of Neurology, London

September, 1918, **41**, No. 2

*Sensation and Cerebral Cortex. H. Head.—p. 57.

Sensation and Cerebral Cortex.—In this article of about 200 pages, Head discusses the following topics: (1) The integration of afferent impulses; (2) the forms assumed by disturbances of sensation due to lesions of the cortex; (3) subcortical lesions; (4) tests which appeal to the cortex and to the optic thalamus; (5) hypotonia; (6) the principles which determine anatomical localization of sensory functions in the cortex. A short account is given of some of the cases on which this research is based.

British Medical Journal, London

Jan. 11, 1919, **1**, No. 3028

*Use of Arsenic in Syphilis. W. T. Lockhart and J. R. Atkinson.—p. 33.
*Agglutinative and Opsonic Action. C. J. Bond.—p. 35.
Cancer of Tongue. D'Arcy Power.—p. 37.
Case of Acute Febrile Polyneuritis. R. W. D. Hewson and R. M. Stewart.—p. 38.
*Streptococcal Invasion of Cerebro-Spinal Fluid. C. J. Marshall.—p. 40.
Influenza Epidemic in Q. M. A. A. C. Hostel, Edinburgh. A. M. Watson.—p. 40.
*Vaccine Treatment of Influenza. R. E. Tottenham.—p. 41.
A New Ulnar Splint. S. A. Moore.—p. 41.

Administration of Arsenic in Syphilis.—The use of concentrated solutions of arsenical preparations in the treatment of syphilis is endorsed by Lockhart and Atkinson. Among 2,859 intravenous injections, there has not occurred a single case of thrombosis of the vein. There have been no early reactions of an anaphylactic character. There have been no reactions, late or early, which could be attributed to the method of administration. Owing to the small size of the needle the pain of introduction is less than where the larger needle required by the gravity apparatus is used and much smaller veins may be successfully entered. On three or four occasions the vein has been missed or completely penetrated, and solution has been injected into the surrounding tissue. This accident causes a good deal of pain, swelling, and disability, which, however, pass off in a few days without abscess formation or permanent induration. A microscopic examination of blood withdrawn from the vein into the syringe containing the arsenic solution shows the blood cells apparently perfectly normal even some hours after withdrawal. One hundred and forty-one patients were discharged from the hospital as outpatients during one month with their external lesions soundly healed. The average duration of their stay was sixteen days. They return for treatment as outpatients at weekly intervals until the full course is completed.

Agglutinative and Opsonic Action.—In order to determine whether the agglutination of red blood cells can be accomplished by the use of chemical reagents, Bond tested a considerable number of substances. The reagents which have so far given the best results have been liquid paraffin and a 5 per cent. solution of gum acacia in normal saline. Liquid paraffin, when used as a dressing for wounds, seems to favor phagocytosis and to promote the separation of necrotic tissue. Examination of the pus cells recovered from gauze soaked in 5 per cent. gum solution when used as a dressing for wounds also shows a high percentage of living phagocytes. Many other chemical substances, of course, when added in certain proportions to a suspension of washed red cells in saline, bring about a clumping which cannot be distinguished under the microscope from the agglutination produced by serum. Among antiseptic reagents, acriflavine, 1 per thousand solution in normal saline, gives this result in a striking manner. In the case of most antiseptic substances, however, the cells undergo rapid injury and eventual disintegration. This does not occur with gum solution and liquid paraffin.

Apart from its action on disintegrated cells, previous agglutination by paraffin or gum solution also opsonizes whole red

cells under certain conditions. Washed sheep's red cells when present in considerable quantity are more toxic to the leukocytes of certain individuals than to those of others. If, however, these washed sheep's red cells have been previously shaken up with gum solution or liquid paraffin before incubation the leukotoxic effect is largely prevented. A mutual adhesion occurs between the red cells and the phagocytes and a number of red cells are ingested.

Some reagents, like mercury perchlorid, which, in dilute solution, agglutinate red cells, are themselves toxic to the leukocytes. Others, like acriflavine, which, in dilute solution, are not markedly leukotoxic, do not seem to promote the ingestion of the red cells. It is a suggestive fact that those reagents which do promote the ingestion of red cells by leukocytes, for example, liquid paraffin and dilute gum solution, are mostly inert substances; they both, in different degrees, protect the shed leukocytes from rapid devitalization. They both affect the density of the serum and alter the surface tension of the cell bodies which they envelop. They are not erythrocidal or hemolytic in character. Thus a 5 per cent. gum solution in normal saline agglutinates washed red cells, but cells so agglutinated are not disintegrated, they can be washed free of the agglutinin in normal saline, and can then be reagglutinated by the gum solution. Reagents, on the other hand, which hemolyze and destroy the red cells prevent ingestion, possibly because they bring about a rapid diffusion of the liberated endotoxin in sufficient volume to poison the leukocytes. These observations suggest that the phenomena of hemagglutination, as it affects the cellular elements of the blood, should be described in terms of both red and white cells.

Streptococcal Invasion of Cerebrospinal Fluid.—Six weeks after an ischiorectal abscess had healed, Marshall's patient began to have pain and stiffness in the neck. There was no antecedent trauma, and no account of personal or family tuberculosis. The left posterior cervical region was swollen, tense, and hot. Fluctuation could not be made out. The greatest tenderness was just to the left of the ligamentum nuchae in its lower part. The perineum revealed the scar of a boil. Rectal examination showed no induration to suggest tuberculosis. No active focus of infection was found. A muscle-splitting approach was adopted. Beneath the deepest layer was found an abscess under great tension; some 25 c.c. of thick creamy pus escaped, and at the bottom of the cavity was felt the bare roughened lamina of the fourth cervical vertebrae; a probe cautiously introduced was felt to pass completely around it. The release of tension caused considerable oozing. This was arrested by light packing, and the next day Carrel-Dakin treatment was established. The bone lesion was sterilized in fourteen days and gave no further trouble; slight and temporary stiffness of the neck resulted. The pus gave on culture streptococci and staphylococci; no tubercle bacilli.

Vaccine Treatment of Influenza.—Tottenham reports on the use of an influenza vaccine consisting of *B. influenzae*, 60 million; streptococci, 80 million; pneumococci, 200 million per c.c., as a curative treatment in all cases of influenza. On admission, the patient is given 0.112 c.c. of the vaccine; forty-eight hours later this dose is repeated, and afterward as often as necessary, at intervals of forty-eight hours. After the first dose the quantity of the vaccine may be increased, but this depends on the reaction to the previous dose. The treatment has been attended with success.

Glasgow Medical Journal

December, 1918, **90**, No. 6

Tuberculosis: Moro's Percutaneous Inunction Test, and Von Pirquet's Cuti-Reaction Test. J. W. Allan.—p. 321. To be continued.
Some Medicines of Our Ancestors. J. F. Fergus.—p. 332.

Indian Medical Gazette, Calcutta

December, 1918, **53**, No. 12

Influenza in Bombay. E. S. Phipson.—p. 441.
Treatment of Baghdad Boils by Ionization. T. G. Evans.—p. 448.
Simplified Technic for Agglutination-Reactions. (Widals). R. Hayes.—p. 449.
Polyneuritic Psychosis: Korsakoff's Syndrome. W. L. Forsyth.—p. 451.

Journal of Laryngology, Rhinology and Otology, London

January, 1919, **34**, No. 1

*Warfare Injuries of Larynx. W. D. Harmer.—p. 2.
War Neuroses of Larynx and Speech Mechanism. H. Smurthwaite.—p. 13.
After-Treatment of Aural and Nasal Operations. G. Wilkinson.—p. 20.

War Injuries of Larynx.—Harmer analyzes 245 cases. He calls special attention to the frequency of paralysis of the vocal cords after gunshot wounds of the neck. Appearing immediately after the wound, it is generally abductor in type in the early stages. There is little doubt in Harmer's mind that shock is chiefly responsible, for the following reasons: (1) The large number of cases reported. (2) Paralysis of other cervical nerves (excluding brachial plexus) are comparatively rare. (3) Other nerves are known to be paralyzed by shock. (4) Paralysis of the recurrent has occurred several times after ligature of carotid aneurysms, and is well known in many other operations of the neck. (5) Paralysis of the brachial plexus is common after wounds of the neck, and all its trunks are generally involved rather than one, as would occur if a direct injury were responsible. The mortality from wounds of the larynx is high.

In 512 cases of neck wounds, mostly treated in France, there were thirty-one deaths, two of which had received injuries to the larynx. On the other hand, 1,873 neck wounds were treated in English hospitals during the same period with only seventeen deaths. Of these 110 received injuries to the larynx and only one case ended fatally. These figures prove that the mortality is much greater at the front than at the base. In two thirds of the gunshot injuries of the larynx that survive for more than a week recovery is complete, and no ill effects are produced beyond alteration of the voice.

Journal of State Medicine, London

January, 1919, **27**, No. 1

Prevention of Venereal Disease and Abortive Treatment of Gonorrhea. L. W. Harrison.—p. 1.
Town Planning in Its Relation to Public Health. S. D. Adshead.—p. 13.

Lancet, London

Jan. 11, 1919, **1**, No. 2

*Shell Shock. C. S. Myers.—p. 51.
*Incidence of Endameba Histolytica. H. A. Baylis.—p. 54.
Analysis of Composite Neurosis. F. Dillon.—p. 57.
*Prevention and Treatment of Diabetic Coma. J. P. Cammidge.—p. 60.
Agglutinins in Malta Fever. L. T. Burra.—p. 64.
Case of Aspirin Poisoning. F. W. Lewis.—p. 64.
Case of Strangulated Femoral Hernia. S. M. Lawrence.—p. 64.

Hypnosis in Shell Shock.—The value of hypnosis in the treatment of shell shock is extolled by Myers. He urges that this treatment be given more extended trial.

Endameba Histolytica Carriers.—Among 400 healthy recruits in the Britsh navy from all over the British Isles, Baylis found that ten were carriers of *Endameba histolytica*. Of these, eight had never been out of the British Isles, and seven at least had never had dysentery. Experiments on kittens were tried with a view to obtaining evidence of the pathogenicity of the strains of cysts from the "new entries." The kittens failed to become infected, but this is not regarded as evidence for the nonpathogenicity of such strains.

Prevention and Treatment of Diabetic Coma.—This subject is reviewed by Cammidge, and he emphasizes the fact that treatment directed to one cause is not likely to control the symptoms, at any rate, more than temporarily, and that the only "cure" is to prevent all possible causes by so arranging the diet that (1) the patient's tolerance for carbohydrate, protein, and fat is not exceeded; (2) the total load of food is within his metabolic capacity; (3) the diet is correctly balanced, and (4) a sufficient allowance of inorganic salts is provided. The earlier in the course of the disease such treatment is commenced the better are the results likely to be and the less difficult will it prove to arrange a diet fulfilling the necessary conditions, but even with advanced cases a surprising improvement can be effected by careful dieting along these lines.

If speedy improvement does not follow these measures, alkaline injections should be tried. Small uncontrolled doses are useless; the only method likely to be of much avail is to employ massive doses and regulate their administration by repeated examinations of the blood by Sellards' method or by estimations of the carbon dioxid content of the alveolar air. The injections should be continued until it is clear that any acidosis, whether due to the diabetic condition or to uremia, has been neutralized by a return to normal of the titratable alkalinity of the blood or of the carbon dioxid content of the alveolar air. The copious diuresis that follows large intravenous injections will tend to eliminate other toxins, and bleeding from the opened vein to the extent of 10 or 20 ounces will also help in that direction. In most cases of coma a dose of bicarbonate of soda approaching 150 to 200 gm. (5 to 7 ounces) will most likely be required. It is dangerous to introduce this amount into the circulation at one dose, and the maximum that should be attempted is 50 to 60 gm., in the the form of a liter of a 5 to 6 per cent., solution, or 1½ ounces of sodium bicarbonate in 30 ounces of water. The solution should be sterilized, if possible, but precautions should be taken to prevent the formation of the caustic normal carbonate, which readily occurs on boiling. The solution should be injected by the gravity method very slowly, half to one hour being allowed for a liter, and it should be kept at or about the temperature of the body. It is usually necessary to repeat the injection in about six hours, and if need be it may be repeated again after twelve and eighteen hours. Cardiac stimulants are advisable at an early stage in all cases of coma or threatened coma. Digitalis, subcutaneously or by mouth, is probably the best, but strychnin, caffein, alcohol, ether, camphor, ammonia, and pituitary extract may also be useful. There is a natural disposition to administer oxygen to relieve the distressing symptoms of air hunger, but it is a useless procedure, except for the mental effect on those who are watching, for the difficulty in respiration has been proved not to be due to lack of oxygen.

Medical Journal of Australia, Sydney

Dec. 14, 1918, **2**, No. 24

One of the Problems of Peace: Mental Deficiency. R. J. A. Berry.—p. 485.
Two Cases of Primary Pneumococcal Meningitis. G. H. Burnell.—p. 490.
Perforating Injury of Both Eyes. J. L. Gibson.—p. 492.

Practitioner, London

January, 1919, **102**, No. 1

Influenza. R. D. Powell.—p. 3.
*Disinfection of Railway Carriages, Public Vehicles and Dwelling-Rooms. D. Duckworth.—p. 5.
Influenza From a Public Health Standpoint. A. Newsholme.—p. 6.
*Influenza as it Affects Air-Passages. S. Thomson.—p. 12.
*Cardiac Complications of Influenza. J. Mackenzie.—p. 19.
*Influenza From Clinical Standpoint. J. Moore.—p. 26.
Psychoses of Influenza. G. H. Savage.—p. 36.
Epidemic Influenza. S. West.—p. 44.

Disinfection of Railway Carriages, Public Vehicles and Dwelling Rooms.—For so-called prophylactic remedies in influenza, Duckworth has more faith in the action of quinin than in any other drug. He is convinced of the value of douching the head and face with water (as hot as can be borne) in cases of distressing influenzal headache associated with sinusitis. The relief afforded is, he says, very noteworthy. Duckworth recommends the adequate disinfection of railway carriages, public vehicles and dwelling rooms which patients, suffering from influenza, have been using.

Influenza as it Affects Air Passages.—The use of sprays or lotions during the acute stage of an influenzal sinusitis is held to be harmful by Thomson because they are apt to disseminate the infection, and there is the risk of their carrying it to the ear. The routine use of a saline or alkaline nose lotion is uncalled for. It is better to prescribe menthol, one-half dram; tincture of eucalyptus, 3 ounces. A teaspoonful of this is put in a pint jug of steaming water, and the vapor is inhaled up and down the nose every two or three hours. It generally relieves pain, it frequently stimulates a free discharge and patients are satisfied that it "clears the head." Relief to the frontal and sphenoidal sinuses may be secured by packing the neighborhood of the middle meatus, for a few minutes every day, with a pledget of cotton soaked in cocain (5 per cent.) and epinephrin. When the acute stage is past, a simple alkaline nose lotion may be employed. The inflammatory troubles of the pharynx and larynx are treated on ordinary principles.

Cardiac Complications of Influenza.—The principles of treatment suggested by Mackenzie for these cases should be devoted to increasing the health of the body, as a whole, in such a way as to increase the natural resistance to infection, to eliminate toxic influences, and brace up the whole man bodily and mentally. The best way to achieve this is by fresh air and judicious exercise in the fresh air. When all fever has subsided, MacKenzie encourages the patient to get up and go about quietly, leaving it to the patient to stop any exertion that produces fatigue. As he improves, the form of outdoor exercise which gives most pleasure is recommended. Injudicious exercise may do harm, but there is one precaution of a very simple kind which suffices to prevent any danger, and that is to instruct the patient to indulge only in an exercise so long as it gives pleasure and causes no distress or discomfort, and to stop or slow down as soon as the sense of exhaustion, breathlessness, or pain is experienced.

Influenza from a Clinical Standpoint.—A word of warning is given by Moore in regard to prescribing alcoholic stimulants in influenza. He says that the mental state in this malady is so excitable, so unstable, so impressionable, so neurotic, that the seeds of intemperance may be sown by following the unthinking advice to take wine or spirits as a stay in weakness. Moore is convinced that alcoholic stimulants are, generally, not only unnecessary but positively harmful in the treatment of influenza. If ordered at all, they should be given with, or in, food, and only for a limited time like any other powerful drug. In the septic bronchopneumonia, so often met with of late, "turpentine punch" proved a valuable remedy. Ten drops of turpentine on a lump of sugar (when it was possible to get it) added to a wineglassful of ordinary whisky-punch, was the form in which this antiseptic stimulant was exhibited.

Bulletin de l'Académie de Médecine, Paris

Dec. 24, 1918, **80**, No. 51

*Rehabilitation of Crippled Soldiers. Gourdon.—p. 632.
Colloidal Treatment of Influenza. A. Rémond.—p. 635; Trapenard.—p. 636
Encouraging Results with Vaccine Therapy of Dysentery. F. Rathery, Ranque and Raux.—p. 636.
*Mirror Writing. C. Mirallié and Denès.—p. 638.
*Preparing Orbit for Artificial Eye. F. Lagrange.—p. 641.

Resumption of Work by War Cripples.—Gourdon reviews the experiences at Bordeaux with 5,104 disabled soldiers under training for self-support. Only thirty-four were so severely crippled from loss of both arms and legs or both arms, that they were incapable of any work. Among the 30 per cent., of the others who were severely crippled in the arms, 37 per cent. had to learn a new trade or readapt themselves to their old trade. This was the case only in 23 per cent. of the men crippled in the legs. The men sometimes rebel against the effort to learn a new trade or business. This makes it specially necessary for the rehabilitation of the crippled to be entrusted to competent physicians and technicians whose advice will inspire confidence, and the example of reeducated cripples will encourage and inspire them. Special training schools for men crippled in the arms are indispensable; in ordinary trade schools where they compare their work with that of their sound mates they are apt to lose all their courage. Fully 62 per cent. of all the maimed were agriculturalists, and 85 per cent. of the farmers spontaneously resumed their farm work, but only 48 per cent., of the agricultural laborers. It is important in farm work to supply a jointed foot to the amputated, as this does not sink into the soft ground. Farm work is particularly advisable after trephining of the skull. These men are liable to be incapable of concentrating their attention for long at a time, and work in the fields gives them the peace and quiet which they require. Men crippled in the legs fall short of the turnout of the normal only by about 10 per cent. But those

crippled in the arms can produce only from 35 to 80 per cent., of the normal turn-out. The great majority of the crippled can thus be trained for manual labor, reserving the commercial and administrative occupations for a small number prepared for them by their previous education. Partial amputation of the fingers or hand interferes very little with manual work. Long forearm stumps can be used without difficulty in a certain number of occupations. High amputation of the forearm or upper arm renders manual work difficult, and it is quite impossible after disarticulation of the shoulder.

Mirror Writing.—Mirallié and Denès report that a woman stricken suddenly with right hemiplegia and motor aphasia began at once to write with the left hand, beginning at the right side. Her writing was thus of the mirror type, and she never noticed that it was not her usual way of writing. Figures as well as words and phrases were of this mirror type, but when she added or subtracted figures, she began at the correct point, at the right. They regard the case as confirming the view that mirror writing is the normal form of writing with the left hand.

Preparation of Orbit for Artificial Eye.—Lagrange cuts a flap, about 2 mm. thick and 6 or 7 cm. wide by 7 or 8 cm. long, in the subcutaneous adipose tissue of the temple. This oval flap with a broad pedicle is utilized to fill up the cavity left in the orbit after enucleation of the eyeball. The flap can be worked under the conjunctiva or not as desired. The rectus muscles can be sutured together to hold it in place.

Bulletins de la Société Médicale des Hôpitaux, Paris

Oct. 25, 1918, **42**, No. 32

*Comparative Percussion. P. J. Ménard.—p. 973.
*Treatment of Influenza. A. Pissavy and R. Robine.—p. 976.
Advantages of Colloidal Lipoid Vehicle for Drugs. Hudelo, Montlaur and Drouin.—p. 977.
*Radiography of Aorta. A. Mougeot.—p. 983.
*Syphilitic Origin of Mikulicz' Disease. E. de Massary and L. Tockmann.—p. 987.
*Sugar Treatment of Tuberculosis. G. Rosenthal.—p. 988.
*Epidemic of Influenza. E. Joltrain and P. Baufle.—p. 991.

Comparative Percussion.—Ménard discusses the findings as they differ during forcible inspiration and normal expiration. If the dulness over the base of the lung, for example, becomes modified during forcible inspiration, he declares that this excludes pleurisy with effusion and pachypleuritis with adhesion of the sheets of the pleura. In pleurisy without effusion there is merely more or less reduction in the inspiratory variation of the percussion sound. The absence of any modification in the percussion sound during forcible inspiration, coinciding with a higher pitch of the sound and reduced elasticity of the chest wall, indicates impermeability of the lung or a severe pleural affection. The absence of any modification during forcible inspiration is especially important with chronic tuberculosis. In the superior lobe it indicates a grave anatomic lesion. In Ménard's extensive roentgen verification of the percussion findings, he always found this area superposed by opacity and lack of any change during coughing. In the other parts of the lung, the impermeability must be considered also in relation to the pleura.

Hexamethylenamin by the Vein in Influenza.—Pissavy and Robine relate that of their thirty-seven cases of influenza with complications on the part of the lungs, seventeen were treated with intravenous injection of 8 c.c. of a solution of hexamethylenamin containing 0.25 gm. of the drug per 1 c.c. One in this group died, while five died in the group of twenty treated with the ordinary measures. The injection was always borne without appreciable by-effects.

Roentgen Study of Aorta.—Mougeot gives two roentgenograms of the normal thoracic aorta injected with some opaque substance, and discusses the findings.

Mikulicz' Disease in a Syphilitic.—The typical lacrimal and salivary gland enlargement of Mikulicz' disease in the case reported subsided under treatment for syphilis. This recalls a case reported by the same writers in which chronic thyroiditis with abortive myxedema simulated general paresis in a syphilitic, and the whole set of symptoms was clinically cured by combined mercurial and thyroid treatment. These two cases show that syphilis may attack the glands more often than has hitherto been credited.

Sugar Treatment of Tuberculosis.—Rosenthal reports a number of cases which apparently confirm the indirect curative influence of subcutaneous injections of sugar solution and the still more effectual action when given by the vein. He gave a series of twenty intravenous injections of 5, 10 or 20 c.c. of a solution of saccharose (equal parts saccharose and water), never noting any local or general reaction. Tests of the urine, etc., showed an activation of liver functioning and of the digestive processes in general. The most convincing of the cases he reports was that of a soldier of 30 with a subacute exacerbation of bilateral tuberculous processes transformed in a few weeks into a torpid state evidently on the way to healing.

Influenza.—Joltrain and Baufle discuss the flaring up of the epidemic of influenza in October, and relate that a troop of soldiers from Indo-China nearly all had the disease lightly in the spring, but when the disease appeared again it spared this troop completely, while troops and civilians around developed it, and in the severer form of the second period. This suggests, they think, an immunizing influence.

Presse Médicale, Paris

Dec. 26, 1918, **26**, No. 72

*Sign of Incipient Exophthalmic Goiter. C. Lian.—p. 665.
Self Protection in Roentgen Work. L. Delherm.—p. 667.
Gun with Bent Bayonet for Immobilization and Traction of Fractured Femur on the Battlefield. L. Babin.—p. 669.

Sign of Abortive Form of Exophthalmic Goiter.—Lian announces that tenderness in the region of the thyroid is a sign of a tendency to exophthalmic goiter. The symptoms on the part of the heart with this abortive form of exophthalmic goiter may be mistaken for a cardiac neurosis. The tachycardia may be moderate, and occur only when standing or working, or under emotional stress. Predominance in the morning and slight maximal hypertension are not restricted to exophthalmic goiter. Only examination of the thyroid body and eyes will decide the question. In every case of tachycardia of doubtful origin, all the ocular signs of exophthalmic goiter should be sought with care, even when there is nothing to suggest exophthalmos or goiter. Sometimes only the behavior of the upper eyelid will give the clue. Certainty is attained by the pain experienced when the thyroid region is palpated or explored with the point of a pin. The patient's wincing and grimaces as the thyroid area is reached, render questions unnecessary. The pain is sharp, like a burn or deep prick. This painful area corresponds almost exactly with the outline of the thyroid or merely of the isthmus. A light stroking of the thyroid region started one patient to coughing. When the goiter is once developed, this sensitiveness vanishes. Hyperesthesia of the thyroid region seems to provide the Ariadne's thread which will enable us to lead out from the maze of cases of palpitations those who have incipient exophthalmic goiter. Lian has thus discovered eight of these *petits basedowiens* in his last thirty cases of puzzling tachycardia. A number of such will probably be found among the cases now labeled tachycardia from shell shock. The experiences related sustain the assumption of an infectious toxic origin for exophthalmic goiter in many cases. Acute articular rheumatism and typhoid probably head the list, but inherited syphilis must sometimes be incriminated.

Progrès Médical, Paris

Dec. 7, 1918, **33**, No. 49

The Support Immediately after Amputation. Roederer.—p. 409.
Pedagogic Anthropology. Godin.—p. 409.
*Malaria and Urinary Infection. Uteau and Piollenc.—p. 411.

Malaria and Urinary Infection.—Two cases are reported which warn that an infectious process in bladder or urethra may induce intermittent attacks of chills and fever which are liable to be mistaken for malaria and treated accordingly. This was the case here, the two soldiers having been taking courses of quinin, but after incision of a urinary phlegmon, or urethrotomy for stenosis, the supposed malaria disappeared permanently.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Dec. 14, 1918, **48**, No. 50

Vital Staining. F. Uhlmann.—p. 1665.
*Influenza and Psychoses. S. Notkin.—p. 1669.
*Malignant Tumors with Leukemia. E. Munk.—p. 1671.
*Medical Aspects of Foot Races. F. M. Messerli.—p. 1680.

Psychoses with Influenza.—Notkin reports two cases in which latent dementia praecox was whipped up into a pronounced form by an attack of influenza. In two other cases acute mania developed during the influenza. He had several other cases of psychoses developing during influenza, but he is convinced that there was always some more or less latent predisposition. The onset was stormy but in a short time essential improvement or complete recovery followed.

Leukemia with Malignant Tumors.—Munk analyzes what has been published on this subject, and reports the case of a woman of 59 who was under observation in the hospital for fifteen months. Pains in the left side led to the discovery of myeloid leukemia, and the left side was exposed to the roentgen rays. Later a sarcoma developed in the foot and another in the knee, and numerous nodules were found in various organs. In certain points, especially the chronic course, the case differs from Sternberg's description of myelosarcomatosis, and there was no tendency to green discloration of the marrow, which was pronounced in all the cases of myelosarcomatosis on record. There was no Bence-Jones albumose to be found, while the blood contained 60 per cent. myelocytes. The case thus had certain features of chronic leukemia and of Rustitzky's multiple myelomas, as well as of myelosarcomatosis, without fitting into the frame of either.

Medical Tests of Marathon Runners.—Messerli reports the findings in some foot races under the auspices of athletic associations and the military service. The preliminary examination enabled him to exclude certain runners whose heart would certainly have been unable to stand the strain without injury. The findings afterward emphasize the great importance of systematic regular training in exercises of the kind. The men trained in athletics bore the long runs up to 21 km. 800 m. without any cardiac or other disturbance. The army runners, on the other hand, who had not had systematic or long enough training developed abnormal manifestations on the part of the heart in 44.7 per cent. He advises shortening the course to 12 km. and insisting on systematic training for the *course de fond*, as this is highly useful and necessary from the military standpoint.

Annali d'Igiene, Rome

September, 1918, **28**, No. 9

Bacteriology of Peritonitis from War Wounds. V. Puntoni.—p. 477.
*Deficiency Diseases. G. Volpino.—p. 482. Conclusion.

October, 1918, **28**, No. 10

*Cultivation of Staphylococci on Previously Vaccinated Culture Mediums. M. Carpano.—p. 545.
*Agglutination of Dysentery Bacilli by Normal and Other Serums. B. de Vecchi and C. Sarti.—p. 556. Conc'n.

Deficiency Diseases.—Volpino reports the results of experimental research on pellagra, scurvy and what he calls monophagism, comparing his findings with those published by others. He is director of the state bacteriologic laboratory at Bergamo, and among the practical results realized was the active immunization of pellagrins against relapses and recurrence. This was accomplished by injection of progressively increasing doses of an aqueous extract of maize. Pellagrins in the first stage of the disease were selected, and the course was begun during the winter, as pellagra generally shows an attenuation in the winter. Fourteen patients were thus treated and twelve have been traced to date. Some of them had been totally incapacitated by the recurrences of the pellagra, but the immunization realized by the injections seemed to banish further recurrences. The cure has been complete to date in six and nearly complete in three others. The disease is stationary in another. These have all returned to their customary diet. One other is under specially favorable dietetic conditions and his health has been continuously normal.

An extract of spoiled maize induces a severe and complex reaction in pellagrins; but nothing of the kind is observed with the extract of sound maize. The severe reaction seems to indicate that pellagrins are in a state of hypersensitization. This assumption is sustained by the fact that guinea-pigs fed exclusively on maize for twenty or thirty days and then injected with blood from a pellagrin die in twenty-four hours, or at most in two or three days, while the blood from non-pellagrins does not affect them. Another feature found common to pellagrins and to the maize-fed guinea-pigs is that their serum contains ferments which digest the proteins of maize. The hypersensitization to the extract of spoiled maize and the ferment content of the serum fluctuate parallel to the manifestations of the pellagra, both practically disappearing as the patients recover from the pellagra. Both are evident in a slight degree in nonpellagrins who are habitual eaters of maize.

The phenomena observed in pellagra throw light on the loss of weight and of appetite from a too long continued uniform or one-sided diet — monophagism. A change to another cereal does not answer; the change has to be to some substance of quite different nature, potatoes or peas, when the experimental animals were running down from three weeks' feeding with corn or any other single cereal. The animal died on a change to rice or wheat, the same as if the corn alone had been continued. There is evidently, besides the lack of certain elements in the food, the presence of certain other elements which in time develop a toxic sensitizing action. In this, monophagism differs essentially from starvation and from avitaminosis. This doctrine of monophagism explains what is observed in pellagra and also in scurvy. Epidemics of the latter have been observed when there was abundance of fresh vegetables or potatoes. There seems to be a toxic sensitization of the organism from the one-sided diet, defective in certain elements and with an overabundance of others, working in a predisposing environment. Turnbull's experiments have demonstrated that certain hay-fever subjects seem to be sensitized against the proteins of certain cereals, so that by dropping bread and cooked cereals from their diet their state of anaphylaxis was much attenuated. But the most convincing proof, Volpino reiterates, of the correctness of his views is his success in immunizing guinea-pigs and pellagrins against return of symptoms by injection of an aqueous extract of maize.

Vaccinated Culture Mediums and Staphylococci.—Carpano cultivated the staphylococcus on the usual culture medium and then filtered out or scraped away the cultures, and sowed the medium again with the staphylococcus after this preliminary vaccination. It did not grow well on broth mediums thus vaccinated, and it did not grow at all on solid mediums. Crossed cultivation with other strains and with other common bacteria showed a reciprocal tolerance, the inhibiting effect being far less pronounced with bacteria such as are commonly associated with staphylococci.

Agglutinins and Coagglutinins in the Serum.—Vecchi and Sarti report that the results of the extensive research here described show that agglutination of typhoid and paratyphoid bacilli has scant diagnostic importance unless it occurs only above 1 : 100. Normal persons frequently display weak agglutinating properties, especially if they have recently been vaccinated against typhoid, as also the sick with other diseases entailing intestinal lesions.

Chirurgia degli Organi di Movimento, Bologna

December, 1918, **2**, No. 5-6

*To Lengthen a Shortened Limb. V. Putti.—p. 421; V. Putti and A. Landini.—p. 469.
*Displacement of Ulnar Nerve for Suture. R. Bastianelli.—p. 490.
*Free Grafts for Mobilization of Soft Parts. I. Scalone.—p. 497.
Immediate Treatment of Wounds of Knee. G. Matronola.—p. 543.
*Sciatica from Vertebral Anomaly. A. Rossi.—p. 583.
*Operative Cure of Coxa Vara. L. Losio.—p. 635.
*To Center the Articulation. A. Lollini.—p. 645.

To Lengthen Shortened Limbs: The Osteotone.—Putti gives illustrated descriptions of the technic he applies to lengthen a shortened femur and means to stretch the soft parts to

correspond. The bone is sawed lengthwise, then half way across at top and bottom of the lengthwise sawed portion. This enables the two halves to be slipped along on each other and lengthens the bone considerably. He does the lengthwise sawing in a sound part of the bone, not through the fractured portion. The sawing is done with a circular saw mounted transverse to the handle. The transverse sawing is done with the saw parallel to the axis of the handle. A Gigli wire saw might be used instead. The incisions in the periosteum are inverse to those in the bone, and the flaps are turned back. The stretching of the soft parts is done by means of two long screws implanted in the femur above and below the plastic operation. These screws are mounted on a straight bar parallel to the femur. This bar can be screwed longer or shorter as desired, thus bringing the screws in the bone nearer together or farther apart. This traction by double infixation can keep up a gentle but continuous traction, graduated day by day to conform to the traction desired and the lengthening realized. Four cases are described to show the harmlessness of this *trazione per doppia infissione*, and the fine results attained with shortening of one or more years' standing. The osteotone is much more convenient in every way than other methods of treating shortening with complicated pulleys, weights, etc. With the osteotone the man can be up and about, with crutches. In one of the cases reported a shortening of 9 cm. of three years' standing was reduced to 2 cm. by this means. It acts exclusively through the skeleton, and exclusively at that portion of the bone which is being lengthened, and it seems to be better tolerated than any other method of external traction. Diagrams are given showing the force applied in comparison to the stretching realized. In one case the integral lengthening of the limb was obtained in fifteen days. The vessels adapt themselves perfectly to the stretching of the soft parts but the nerves are less amenable sometimes. In one case there was pain in the sciatic nerve for a few days but it then disappeared spontaneously. In one case the plastic operation had to be done at the site of the old fracture, and pains in the femoral nerve compelled the removal of the osteotone before the full lengthening was realized.

Displacement of Ulnar Nerve to Shorten Its Course.—Bastianelli reports two cases in which the ulnar nerve at the elbow required suturing. By moving the stumps forward, to the front of the elbow, the course of the nerve was shortened so much that the stumps were readily sutured together. There had been quite a gap between them as they lay in their natural position. The two patients have not experienced any inconvenience from the altered position of the nerve.

Autografts of Fascia to Aid in Mobilization of Tissues.—Scalone gives the details of thirteen cases in which he applied an investing sheath to a sutured nerve or other tissues liable to develop adhesions. The investing sheath was cut usually from the fascia lata, only once from the aponeurosis near the field of operation. The operations were done for six different indications, including reconstruction of the aponeurosis destroyed by trauma, of tendon sheaths after suture or plastic operations on a tendon, and to prevent the radius and ulna from growing together again after synostosis had been broken up. In two cases the fascia flap was used to substitute the dura mater after a war wound of the skull.

Sciatica from Congenital Anomaly of the Vertebrae.—Rossi remarks that the roentgen rays have cleared up many mysteries but scarcely any more interesting than the symptoms from radicular neuritis of the sacral plexus resulting from a congenital anomaly of the fifth lumbar vertebra—what he calls sacralization of this vertebra. He has encountered twenty-two cases in roentgen examination of 800 spines, and others have reported similar cases, bringing to forty-six the number now on record. The resulting disturbances had been labeled rebellious bilateral sciatica, Potts' disease, coxalgia, or lumbago. The pains in the lumbar-sacral region or hip joint were aggravated by walking and fatigue of any kind, and were relieved by repose and lying down. The disturbances did not develop as a rule until between the ages of 20 and 35, although in one of his cases a child of 6 was affected. Sometimes they came on first after a trauma or acute polyarticular rheumatism. The complete ossification of the skeleton probably is responsible for their final development in some cases. The prognosis is generally benign although the disturbances may become serious and chronic. Recurrences are not frequent. If prolonged repose, electric and other medical measures fail to cure, a bone graft might be proposed to relieve the compression on the nerve. The outcome is generally favorable.

Treatment of Extreme Coxa Vara.—Losio extols the advantages of Codivilla's hinge method of osteotomy at the junction of the neck and shaft of the femur in treatment of coxa vara. But when the deformity is of a very extreme type, he prefers a curving osteotomy of the greater trochanter, and shows by a case reported in detail the superiority of this technic in these extreme cases.

Calculation of Center of Joint.—Lollini calls attention to the mathematical precision of the means with which he determines the exact center of the joint in measuring for an artificial limb. The illustrations show at a glance how the joint has its exact center determined by means of a curve drawn with a pencil fastened to the limb below as the joint is flexed and extended, the whole limb lying on the drawing board. The part of the limb above the joint has to be immovably fastened. The simplest means for this is to apply a plaster dressing and screw this hard shell to the board as he shows by illustrations of the thigh and knee thus arranged. The pencil fastened to the stump below the knee draws the arc of a circle as the joint is flexed. The radii drawn from different parts of this arc of a circle all meet at a point which is the exact functional center of the knee joint. The same principle can be applied to any joint. The arc formed by the play of the joint and recorded with an attached pencil gives the basis for drawing the radii, and their converging point is the center of the joint.

Gazzetta degli Ospedali e delle Cliniche, Milan

Sept. 5, 1918, **39**, No. 71

Influenza in Italian Army. F. Pancrazio.—p. 688.

Sept. 19, 1918, **39**, No. 75

Artificial Pneumothorax in General Practice. G. de Lucchi.—p. 720.

Sept. 22, 26, 29, 1918, **39**, No. 76-78

Epidemic of Dysentery in Genoa District. F. Durand.—p. 726.

Policlinico, Rome

Dec. 22, 1918, **25**, No. 51

Influenzal Pneumonia and Pneumonic Plague. G. Dragotti.—p. 1247.
*Does Influenza Confer Immunity? V. Scoccia.—p. 1249.
*Motor Plastic Operation on Arms. A. Chiasserini.—p. 1250.
Plaster Cast with Traction for Femur. L. Cerchione.—p. 1254.
Continuous Traction without Weights, for Unsutured Stumps. E. Bellandi.—p. 1255.
*Import for Prognosis of Cardiac Extrasystoles. G. Galli.—p. 1256.

December, 1918, Surgical Section No. 12

*Paraffin Drainage. A. L. Soresi.—p. 353.
*Hypogastric Diversion of Urine. R. Mosti.—p. 374.

December, 1918, Medical Section No. 12

Action of Endocrinous Glands on Uricolysis. L. d'Amato.—p. 353.
Albuminuria without Nephritis. I. Romanelli.—p. 362. To be cont'd.
Respiration in Pleurisy. G. Stradiotti.—p. 381.

Does Influenza Confer Immunity?—Scoccia relates that epidemic influenza swept down on the Spezia hospital during the months of May and June and every one of the eighty nurses and attendants contracted the disease. Late in September the epidemic returned, severer than ever, but it spared completely all the nurses. Not one was affected. The conclusion seems obvious that the first attack left an immunity.

Plastic Motor Surgery.—Chiasserini describes three cases in which he reamputated the forearm to permit muscular control of the prosthesis. In another case he operated on the hand for the purpose.

Import of Extrasystoles for Prognosis.—Galli remarks that as extrasystoles may be encountered in both the well and the sick, while they may be missing from the graver clinical pictures, not much importance can be ascribed to them. He warns further that the subject's attention should never be called to them. If the subject has noticed them himself, he

should be reassured and tranquillized at once. This is especially necessary in military circles as otherwise the man might cultivate this symptom and get discharged from service on account of it. Galli has seen men labeled myocarditis solely on the basis of these common extrasystoles.

Paraffin Drainage.—Soresi does not hesitate to call this method a new principle of drainage for surgical use. It is based on the fact that paraffin has no affinity for any other substance and is not affected by the organic fluids. Its name, *parum affinis*, suggests this. A strip of gauze impregnated with paraffin and carried into the depths of a wound holds aloof from the tissues and fluids, as it were, leaving always a free space between it and the tissues and fluids. This space, aided by gravity, is always sufficient for ample drainage of the secretions of a wound. No tubes, etc., are necessary. Three years of experience with war wounds treated with these paraffined strips of gauze have confirmed that, absolutely without exception, any quantity of secretions that may be produced are effectually drained away. Any paraffin will do. He heats a photographic bath tray, containing water, over an alcohol lamp. A smaller tray in the water tray holds the paraffin, and a narrow strip of gauze or cloth is held up by the two ends and worked back and forth in the melted paraffin until thoroughly coated with it, the entire length of the strip. If coarse gauze is used, the strip can be doubled before dipping. The strip can be dipped more than once if desired. The ends that had been held in the hand must be coated and dipped in turn also. Threads, rolls of gauze, and tubes can likewise be coated with the paraffin and used for special indications. Another way of applying the principle is by pouring melted paraffin directly into the wound. It settles down into the deepest recesses and crowds out the pus and loose foreign bodies, while drainage continues around it, and the hot paraffin has a stimulating action on the tissues. Soresi gives illustrations of the simple and inexpensive technic, and expatiates on the drawbacks of other methods of draining, and the advantages of the paraffin method, besides those already mentioned. He warns that the aid of gravity must be utilized to the extreme. His preliminary communication on this paraffin or petrolatum method was mentioned in THE JOURNAL early in 1916. His experience since then, he declares, has confirmed more and more the superiority of paraffin drainage over other methods in vogue to date.

Diversion of Urine with Wounds of Urethra.—Mosti reports eight cases to demonstrate the advantages of hypogastric cystotomy in case of injury of the urethra. If there are no signs of local sepsis, this may suffice alone, giving the urethral lesion a chance for spontaneous repair. A retention catheter should not be used except when the urethra has had to be incised, and then, only after the wound has begun to heal. Under other conditions the hypogastric diversion of the urine renders it unnecessary, while its use may entail serious injury.

Archivos Españoles de Enf. del Ap. Digestivo, Madrid

November, 1918, **1**, No. 11

*Chemical Study of Gastric Juice. L. Usobiaga.—p. 497. Conc'n.
*Stomach Disturbances after Salicylic Medication. R. Luis y Yagüe.—p. 501.

Chemical Research on Gastric Juice.—Usobiaga describes the various technics in vogue for study of the gastric juice, but declares that the Hayem and Winter incineration method surpasses all others in simplicity and the distinctness of the reactions. No complicated apparatus are required and the procedure takes very little time.

Stomach Derangement from Acetylsalicylic Acid.—Luis y Yagüe relates that during the epidemic of influenza many persons took acetylsalicylic acid or sodium salicylate, and numbers of cases were encountered in which severe stomach disturbances followed, sometimes with actual hematemesis. The drug was taken in the usual doses and intervals, and the disturbances began gradually and grew constantly worse, with sometimes sudden hematemesis; or melena was the first indication of the gastric hemorrhage. None of the persons thus affected had complained of stomach trouble but practically all had a history of a "gastric past," and the connection of the gastropathy with the medication was confirmed by the disappearance of symptoms when the drug was suspended, and their return when it was resumed. The greater number of cases coincided with the taking of the drug in the form of a tablet, swallowed without dissolving. No disturbances of any kind had followed when the drug had been given in the form of an enema. The mode of onset of the disturbances was quite different from that with an idiosyncrasy. Everything seems to indicate a direct local irritation of the stomach mucosa from the drug, acting like a caustic on a mucosa which happens to be a point of lessened resistance, or subject to erosions and particularly friable from any cause, and particularly with a latent ulcer. The normal mucosa seemed to bear the drugs without harm. The association of acetylsalicylic acid with sodium bicarbonate may promote the corrosive action as an alkaline medium accelerates the splitting of the drug and the liberation of the salicylic acid. The stomach history of every patient should be ascertained before prescribing either of these drugs, and they should not be given by the mouth in case of doubt, or at least the drug should be well diluted, and taken after eating, not before. The hemorrhage from the stomach cannot be explained by toxic action nor by the action of the influenza as no cases were encountered except those in which one of these drugs had been taken. Eight typical cases are related. The gastric hemorrhage was very severe in some of them, occurring with syncope, and returning in one case after only three or four tablets had been taken. Sodium salicylate was responsible in only two of the cases. The doses are not mentioned.

Cronica Medica, Lima

October, 1918, **35**, No. 664

*Chorea. E. Odriozola.—p. 289.
*Tuberculin in Ocular Tuberculosis. A. Gardini.—p. 293.
Pathologic Anatomy of the Spleen. O. Hercelles.—p. 312. Cont'n.

Chorea.—Odriozola's experience has confirmed the assumption that chorea is a morbid entity with a multiple infectious origin, causing actual organic disturbance, probably in the cortex. It calls for repose for body and mind, removal of every possible focus of infection in teeth or tonsils and of irritation from helminths, otitis media, adenoids, phimosis, etc. The child should be kept out of school during convalescence to avoid relapses. In giving Fowler's solution the possibility of arsenical neuritis must not be forgotten.

Tuberculin in Ocular Tuberculosis.—Gardini reviews the testimony for and against tuberculin treatment of tuberculous lesions in the eye, and states that Dr. Campodónico has reported a case of tuberculous iridocyclitis which improved under two injections of tuberculin until almost perfect vision was restored. A year later the symptoms returned, still more severe, and fearing the loss of the eye from the hypertension, iridectomy was done, followed by another course of tuberculin treatment which proved as successful as before in clearing up the eye and restoring vision. Gardini emphasizes the necessity for small doses and avoidance of a febrile reaction, and long continuance of the tuberculin to ward off a relapse. There is no use in trying the tuberculin for ocular tuberculosis if there are already pulmonary lesions installed. Focal, local and general reactions show that we are on the right path, but warn to slow up some. The local reaction is of no moment except as an index of the patient's susceptibility. A focal reaction always occurred in the eye affected. He began with 1/10,000 mg. and very slowly and tentatively increased the dose to 1 mg. as the maximum, with four or five days' intervals. Three cases are described; the patients were two girls of 13 and a young woman. The tuberculous keratitis in the latter was of three years' standing and peculiarly tenacious. No benefit was apparent under the tuberculin treatment. The case teaches the lesson not to delay tuberculin treatment too long. One of the girls had had keratitis for two months and it improved to a clinical cure under the tuberculin treatment. In the other girl iritis, with a solitary tubercle and posterior synechia, completely and permanently retrogressed under the three months' course of tuberculin treatment.

Prensa Medica Argentina, Buenos Aires

Nov. 10, 1918, **5**, No. 16

*Vaccination Against Typhoid. S. Mazza.—p. 157.
*Tuberculin Test in Children. F. de la Torre.—p. 159.
*Malformations of Uterus. M. L. Pérez.—p. 159. Conc'n.
Complex Ocular Paralysis. A. Barbieri.—p. 165.

Nov. 20, 1918, **5**, No. 17

Vestibular Nystagmus. R. Argañaraz.—p. 169. To be continued.
*Continuous Drainage for Ascites. N. Tagliavacche.—p. 172.

Vaccination Against Typhoid in Argentine Army.—Mazza is chief of the laboratory service of the Argentine military medical department, and he relates that unprecedentedly fine results were obtained when the men were given two injections of larger doses instead of the three injections of former days. Even a single injection will answer if the vaccine is very fresh. It can be in an aqueous solution for the purpose, and the dose must be large. In case the vaccine cannot be absolutely fresh, lipovaccines should be used. He adds that the slow absorption of the lipovaccines, without reactions, and their indefinite keeping properties, without change, render them the ideal vaccine when it is desired to give merely one single, highly concentrated injection. The statistics he gives from the Argentine service confirm his statements in every respect.

Tuberculin Tests in Orphan Asylum.—De la Torre reports a positive response in seventy-one out of the 171 children tested. About 20 per cent. of the infants under 1 year gave a positive response, including one only 2 months old; 34.4 per cent. of those between 1 and 2; 42 per cent. of those between 2 and 5; 47.6 between 5 and 10, and 57 per cent. between 10 and 15. Of the total positive responses only fifty-two were obtained at the first test; eleven at the second, and the others at the third to the sixth application of the test. The first three tests were made by the skin technic, the others by Mantoux' intradermal method.

Malformations of the Uterus from the Obstetric Standpoint.—Pérez gives in this concluding instalment the various means for detecting malformations of the pregnant uterus, and describes the case of a primipara with a double uterus. The pregnant portion of the uterus lay slanting in the abdomen, while the empty portion, as large as a mandarin orange, opened into the cervix and impeded delivery as if a low tumor were in the way. The presence of the empty half entails abnormal conditions; in this case it seemed to have been responsible for the premature delivery. The woman entered the hospital at about the seventh month as there were small repeated hemorrhages from the uterus. She was given two enemas with laudanum and was kept in bed, but the next day the membranes ruptured and delivery followed spontaneously in a few hours. The child gave a cry, but soon died. The following day labor pains came on again, and finally scraps of decidua tissue were found loose in the vagina. This suggested the possibility of a double uterus, confirmed by examination under a few whiffs of chloroform. The bibliography on malformations of the uterus is appended, a total of 121 titles.

Continuous Autodraining of Ascitic Fluid.—Tagliavacche gives an illustration of what he calls a button-cannula. It is a broad tube, bent at a right angle, with wide openings at the tip. This tip is introduced into the abdominal cavity, while the flat flaring mouth of the tube, which is fitted into the subcutaneous tissue, keeps the tube in place, preventing its slipping into the abdominal cavity. In the case for which the silver drain tube was made, the ascites was the consequence of a syphilitic liver disease in a married woman of 43. The button rested on the aponeurosis, and the fluid drained through it best when the woman lay on her side. The case was a severe one, 12 liters of fluid having been removed just before the button-cannula was introduced, and the liver lesions were irreparable. The woman died about five months afterward, but her condition in the meanwhile had been rendered much more comfortable. The cannula was borne well. In a future case he would introduce it at a lower point in the abdomen in order to take better advantage of gravity.

Progresos de la Clinica, Madrid

October, 1918, **6**, No. 70

*Experiences with Tuberculosis. J. V. Montenegro.—p. 205.
Mental Deficiency in North America. S. Rubiano.—p. 219.
*Uric Acid in the Human Organism. J. B. Millares.—p. 232.
*Treatment of Influenzal Pneumonia. A. Piga and L. Lamas.—p. 262.

Experiences with Pulmonary Tuberculosis.—Montenegro remarks that if he had preserved all the records he would have 40,000 cases on which to base his conclusions. But 20,000 adult cases are enough, and he here classifies this material. Over 18 per cent., were under 20; 40 per cent., between 20 and 30; 25 per cent., between 30 and 40, and 11 per cent., between 40 and 50. There were familial antecedents in only 26.53 per cent. of the 8,939 cases in which this was investigated. This group included 4.57 per cent. with tuberculous husband or wife; 11.6 per cent., tuberculous parents, and 8.9 per cent., tuberculous brothers and sisters. This low familial percentage is due to the fact that the familial group of infections so often prove fatal before adult age is reached. In only 62.36 per cent. was there history of some precursor disease, bronchitis in 28.67 and pneumonia in 10.41 per cent., tuberculous lesions elsewhere in 2.12 per cent. Early hemoptysis was noted in 48.16 per cent., and he insists that every hemorrhage from the lung in the young, if mitral stenosis and echinococcus disease can be excluded, is a sign of tuberculosis. It is not a grave symptom if not too profuse and if not accompanied by fever. He found a record of hemoptysis in 52 per cent., of the men and only in 48.88 per cent., of the women. The right side was affected in 35.79 per cent., of 11,485 cases, and the left side in 11.47; both lungs in 51.72 per cent., the sexes about equally represented in each group.

Uric Acid.—Millares' article obtained the prize offered by the *Progresos*. He presents the present status of our knowledge on the formation and elimination of uric acid in health and disease, recalling that the relation of uric acid to urea is a factor variable in each organism and independent of the food. The uric acid-forming property of different foods has a wide range, from thymus at one extreme to milk and eggs at the other. He adds that the normal uric acid content of the blood can be determined most conveniently and reliably by the Brugsch-Kristeller color method. It is based on the blue tint which develops when sodium carbonate is added to the solution of uric acid after it has been mixed with a solution of sodium tungstate. Details of the technic are given.

Treatment of Pneumonia.—Piga and Lamas insist that the first indication is to combat the toxemia, and they agree with Barbary that cholesterol is the best means yet at our disposal for this, but they do not specify how it should be given. They warn that the germs are in the blood although they seem to be only in the respiratory apparatus. The danger is in the blood; here the deadly germs are multiplying, and it is here they must be attacked. They consider mercuric chlorid as the best weapon to date for this, injecting it directly into the blood. Venesection may also be useful, injecting saline with epinephrin alternately with caffein to compensate for the blood withdrawn. Cold packs to reduce the temperature with medication to stimulate leukocytosis, in the grave cases, turpentine. Pleural effusions must be tapped, and they advocate the use of serum from the renal vein of goats, especially if there is reason to assume that the pleural effusion is of mechanical origin. Surgical measures should not be delayed if pus develops in the pleura. No technic nor doses are mentioned for any of the above.

Revista Española de Medicina y Cirugia, Barcelona

November, 1918, **1**, No. 5

*Retention of Secundines. A. Esquerdo.—p. 217.
Some Points in Microscopic Technic. P. J. Pujiula.—p. 221.
Referendum on Influenza. F. Tous Biaggi and others.—p. 225.

Treatment of Retention of Fragments of the Placenta.—Esquerdo has long been teaching that after the child has been delivered, the placenta and blood clots are to be regarded as foreign bodies which should be got rid of as soon as possible. He makes a practice of clearing out the uterus without delay, no matter what the conditions may be in regard to infection, after waiting at most twenty-four hours.

He clears the uterus but warns against using the curet for the purpose. Rubber drain tubes are placed to insure proper drainage, and the patient can then be left to the care of the nurse. He proceeds to clear out the uterus if all the placenta has not been expelled within twenty-four hours after the childbirth or abortion, or even earlier if hemorrhage or fever indicates that the fragments of the placenta are inducing irritation. When dilatation does not have to be forcible, there is no need for general anesthesia. He has not done any tamponing afterward for twelve years, and regards the whole procedure as so harmless that he does not hesitate to practice it even in incipient septicemia and peritonitis. He is convinced that it is the only means to ward off or control salpingitis.

Revista de Medicina y Cirugia, Havana

Dec. 25, 1918, **23**, No. 24

*Echinococcus Cyst of Liver. J. A. Presno y Bastiony.—p. 675.
Gallstone Cholecystitis at Fifth Month of Pregnancy. E. Stincer.—p. 681.

Echinococcus Disease of the Liver.—Presno remarks that echinococcus disease is quite rare in Cuba. The case he reports is unusual further in that the echinococcus cyst formed a pedunculated tumor which was easily removed by cutting out the pedicle from the liver tissue. The patient was a Syrian who had been living for several years in Egypt. The tumor was supposed to be a movable kidney, as he had had nephropoxy done once and it was assumed that the kidney had worked loose, but an incision in this region showed it still in place. A median laparotomy then cleared up the case.

Semana Medica, Buenos Aires

Oct. 10, 1918. **25**, No. 41

*Puerperal Gangrene of Uterus. E. Zarate.—p. 439.
Fibromas of External Ear. R. Becco.—p. 444.
*Simple Ulceration of the Stomach. L. A. Huerta.—p. 446.
Forceps and Version as Aid to Pubiotomy and Symphysiotomy. T. A. Chamorro.—p. 448.

Puerperal Gangrene of the Uterus.—Zarate cites Beckmann's compilation of forty cases of gangrenous metritis and reports a case from his own practice, the first published in Argentina. It seems to be rare in France, but Beckman's compilation included twelve cases in three years in one hospital at Petrograd. Fully 90 per cent. of the cases on record were in Slavic women. The sloughed off wall of the uterus is usually expelled about the close of the third week. The extreme sensitiveness of the uterus, the change in color, the fetid odor of the lochia and the small rapid pulse are the only clinical signs of the dissecting metritis at first. The mortality according to Beckmann was 28 per cent., the deaths occurring from perforation or septicemia. Intra-uterine treatment is contraindicated. In Zarate's case the sloughed off strip measured 4 by 15 cm. The odor was cadaveric, but as soon as it had been expelled the temperature and pulse returned to normal and clinical recovery was soon complete. The patient had borne nine children but only one and the fruit of the present pregnancy were viable. The others died soon after birth. Delivery had been instrumental in all. The microscope showed an enormous number of associated germs in the connective tissue of the cast-off sequester. These germs had evidently liquefied the interstitial tissue, and this facilitated the elimination of a large mass of muscle relatively only slightly altered.

Simple Gastric Ulceration.—Huerta presents arguments to prove that every case of Dieulafoy's exulceratio simplex should be sent to the surgeon at once without wasting time on medical measures. If this were done there would be no deaths from this affection. It always begins with rupture of an arteriole, but the secretions, the peristalsis and the fluid in the stomach prevent clotting to block the opening in the arteriole, or conditions may interfere with its retracting to close the opening spontaneously. Even although the patient may be absolutely still, this does not ensure conditions in the stomach allowing the plugging of the hole by a durable coagulum. In a case described, a man of 39, always healthy except for a well treated syphilis in 1913, was taken suddenly with hematemesis without pain. He kept still in bed with ice to the stomach, but twelve hours later the hematemesis returned, losing 1.5 liters of blood, and a tender point was evident in the epigastrium. The vomited blood was red, with black clots, no cough or froth, and the diagnosis of exulceratio simplex was confirmed by the operation which followed at once. An incision 10 cm. long in the anterior aspect of the stomach showed nothing abnormal until the stomach was everted, when three bleeding vessels were located in the posterior upper region of the stomach. Each was ligated with a crown of silk stitches around the bleeding points, 2 or 3 cm. apart. The patient has been in robust health during the years since. Huerta remarks that up to 1912 there had been only fourteen operative cases of this affection published. Then Castro reported the first case in Argentina.

Acta Scholæ Medicinalis Univ. Imp., Kioto

Nov. 30, 1918, **2**, No. 4, German Edition

*Test for Sugar in Milk. S. Miura.—p. 413.
Formation of Tyrosol from l-Tyrosin by Bacteria. K. Hirai.—p. 425.
*Influence of Lipoids on the Solubility in Ether of the Haloid Salts. T. Yoshitomi.—p. 433.
Disintegration of dl-Phenylalanin by Bacillus Proteus and Bacillus Subtilis. H. Amatsu and M. Tsudji.—p. 447.
*The Liver in the Japanese. T. Kudo.—p. 459.
Pressure Atrophy of Bone and Cartilage. Y. Tanaka.—p. 491.

Determination of Milk Sugar in Milk.—Miura describes a technic which facilitates the removal of the albumin in the milk, and determination of the sugar content.

Influence of Lipoids on Solubility of Haloid Salts.—Yoshitomi reports that bromids otherwise insoluble in ether, become dissolved under the influence of organic lipoids or lecithin. This influence is even more pronounced on the iodids, but less so on the chlorids. Iodids are also dissolved by benzin but not the bromids.

The Japanese Liver.—Kudo has made a special study of the liver from 165 Japanese cadavers and tabulates the findings. He adds that no comparison can be made between his findings and the liver in other races as he does not know of any systematic research of the kind in other countries with which they can be compared. His article is profusely illustrated.

Nederlandsch Tijdschrift v. Geneesk., Amsterdam

Nov. 16, 1918, **2**, No. 20

*Reform in Medical Education. G. van Rijnberk.—p. 1587.
*Direct Cause of Death with Cancer. F. Meursing.—p. 1593.
Roengenoscopy of Lacrimal Passages. G. van Gangelen.—p. 1602.
*Prochownik Diet in Pregnancy. W. H. C. G. Keyzer.—p. 1606.
*Suppuration with Influenza. C. A. Ide.—p. 1612.
Epidemic Meningitis. W. Hoogslag.—p. 1613.
*Present Status of Trench Fever, etc. L. K. Wolff.—p. 1614.

Reform in Medical Education.—Rijnberk recently summarized Schwalbe's suggestions in this line. (See abstract on page 317 of THE JOURNAL, Jan. 25, 1919.) He here describes how Schwalbe proposes to gain time for the new branches he insists on, without lengthening the course. He suggests that the natural sciences, physics, etc., in the preparatory school should be given in special courses restricted exclusively to what is needed as a basis for the study of medicine, and no more. The course could easily be arranged with this in view. The course in physics should be restricted to the main points, and no practical exercises in physics should be expected of the medical student. All this leaves more time for chemistry, and a thorough grounding in this is necessary for a just conception of metabolism in health and disease, for dietetics, hygiene, legal medicine, therapeutics, etc. Laboratory work in chemistry is necessary. Botany, zoology and comparative anatomy he would discard altogether, and in place of them have biology, including heredity and paleobiology taught by a medical man.

The independent dissecting of cadavers he would also banish from the clinical years of the medical course. The knowledge derived from this work as at present conducted is not sufficient to enable the student to make independently a medicolegal necropsy, and he learns just as much in regard to the pathology of an organ when the professor takes it out of the cadaver before his eyes, as when he takes the organ out himself. Schwalbe urges further considerable cutting

down in the practical laboratory work in bacteriology, including serology. The students cannot master the technic enough so they can go on to apply it independently. The cursory instruction in this branch can therefore be restricted to giving the students an insight into the methods of this special branch. The theoretical courses should also be reduced in number, the so-called general and special pathology, etc. A good textbook on the subject, studied quietly at home, is much more useful than the time-wasting and, from the nature of the subject, the dry theoretical lectures on these topics. When the medical student is ready for the final "candidate year," Schwalbe would have anatomy given less time and attention than is the rule now. He advocates breaking with the old tradition that the student must make his own preparations of all the nerves and muscles in the body. Schwalbe remarks, "Any one entering a dissecting room today can imagine himself transported back to the days of Vesalius. The students working so zealously to trace back to their first origins and final terminals, all the muscles, nerves and blood vessels, give the impression that they are striving to make discoveries in anatomy, as if the location and the course of the nerves, etc., were being investigated for the first time." In order to give the students a good idea of the relations between the muscles, joints and bones, he advocates demonstrations on the living body as anatomy is taught to students in the art schools. Also with roentgenograms and moving pictures. "In the dissecting room, let the attention be concentrated on topographical anatomy, especially of the cavities."

Rijnberk comments on all this that none of his readers probably will agree with Schwalbe in all points. He himself does not. "But it is certain," he adds, "that every one will find something in Schwalbe's remarks which appeal to him to some extent. The spirit of the university is always conservative, holding back from innovations. And in this lies its strength, but at the same time a danger. Life goes at a rapid pace nowadays. If the professors do not adapt themselves to the new needs and take into account the new demands on the profession, the training for which is their task, they fall short in the fulfilling of their duty. And there is no doubt that medical education as it now is conducted—good as it is in a certain sense—yet in many important points it does not answer its full purpose. With more exertion on the part of teachers and students than is necessary, yet it fails to attain all that might be attained, as every one knows who has given any thought to the matter in relation to practical needs."

Causes of Death with Cancer.—Meursing seeks to answer the question what people with cancer die of. He is prosector at the Pathology and Anatomy Laboratory at Amsterdam, and states that at 4,330 necropsies in the last nine years he found a malignant tumor in 602. The hospital with which the laboratory is connected does not take gynecologic, mental or eye cases, so that these groups are not represented among the cadavers. Of the total 14.4 per cent. cancer cases, the youngest age represented was a man of 21 with a liver cancer. In twenty-three cases there were two cancers, both possibly primary. The total of cancers was thus 625. About 25 per cent. had succumbed to cachexia; 2.4 per cent., to hemorrhage, mostly gastro-intestinal cases but there was one bladder case, and in four cases the fatal hemorrhage had occurred from a metastatic nodule on the surface of the liver. This suggests the necessity for caution in palpating the liver. About 5 per cent. of the intestinal cancers and 3.6 per cent., of the gastric cancers entailed fatal hemorrhage. Ileus, suffocation or pressure on the spinal cord were other causes of death, thus, a total of 38 per cent. for which the tumor itself was directly responsible. In the fifteen bladder cancer cases there were papillomas also in the bladder in three, that is, 20 per cent.; and in the stomach in eight of the 218 gastric cancer cases, that is, in 1.2 per cent. In the noncancer cadavers he found bladder papillomas only in 0.23 per cent., and stomach papillomas only in 0.36 per cent. These figures show that in 50 per cent. of the stomach papilloma cases malignant disease developed, as also in 30 per cent. of the bladder papilloma cases. Pulmonary embolism from three to thirteen days after the operation was the cause of death in 1.3 per cent. of operative cancer cases, and in 0.7 per cent., of the total cadavers. In about 4.7 per cent., of the cancer cases death was due to pulmonary tuberculosis, while this was the cause of death in 22 per cent., of the total 4,330 necropsies. There was thrombosis in 5.2 per cent.; in 8.5 per cent. of the cancer cases.

Diet in Pregnancy.—Keyzer protests against some recent statements to the effect that the Prochownik diet for pregnant women has a tendency to make the woman weak while not facilitating the birth process. His experience with it has been extremely favorable. He recalls that Prochownik introduced this special diet exclusively for women with contracted pelvis, and this is its special field. Keyzer describes a particularly instructive case in which a multipara with contracted pelvis had always had extremely difficult deliveries until this diet was systematically followed at each pregnancy and approximately normal obstetric conditions were realized thereby. At a later pregnancy she neglected the Prochownik dietetic restrictions, and delivery was very difficult, the child's arm being broken in the procedure.

Influenzal Suppurative Process.—A woman of 59 was apparently recovering from influenzal pneumonia when she developed suppurative mastitis, followed in a few days by paralysis of the legs and other symptoms indicating some severe process at about the eleventh thoracic vertebra, with sudden death two days after the onset of the paralysis.

Trench Fever, etc.—Wolff's article was prepared at the request of the Netherlands public health authorities, and presents the present status of our knowledge in regard to trench fever, P. U. O., febris wolhynica, five-day fever, and alternating fever. His references are mostly to German weeklies in the last two years, with the British, and the American report on trench fever.

Mededeel. v. d. Burg. Geneesk. Dienst, Batavia

1918, No. 6, Edition in English

*Blastomycosis of Brain. P. C. Flu and M. M. G. Woensdregt.—p. 1.
*Questions of Water Supply. Eijken.—p. 27; 46; Id. and Jansen.—p. 40.
*Fat-Soluble Vitamins in Coconut Oil. B. C. P. Jansen.—p. 78.
Fecal Carcoma. B. C. P. Jansen.—p. 95.
*Is Vitamin Identical with Secretin? B. C. P. Jansen.—p. 99.
Filariasis in Netherlands-Indies. P. C. Flu.—p. 105.
*Agglutinating Flexner Bacilli by Normal Serum. P. C. Flu.—p. 111.
*Intestinal Parasites in Natives of Java. P. C. Flu.—p. 113.
Blood Stains under Direct Sunshine. P. C. Flu.—p. 117.
Phenol in Leaves of Coleus. F. Weehuizen.—p. 120.
*Flexner Bacilli Carriers. P. C. Flu.—p. 123.
Meningococci Carriers. P. C. Flu.—p. 138.
Microchemical Tests for Traces of the Counterfeiting of Coins. F. Weehuizen.—p. 156.
Error in Benzidin Test for Occult Blood. F. Weehuizen.—p. 159.
Adulteration of Fresh Milk with Condensed Milk, etc. F. Weehuizen.—p. 161.
*Protozoa in Human Intestine. P. C. Flu.—p. 164.

Blastomycosis of Central Nervous System.—Flu thought at first that the symptoms of the Chinese man were those of typhoid, especially as agglutination was decided at 1:400. Two days later meningitis seemed more probable, but lumbar puncture soon revealed blastomycetes in the spinal fluid, and necropsy disclosed foci of blastomycetes in the brain substance and in the pia of both brain and spine. The primary invasion seemed to have been at the base of the brain, and no blastomycetes were found elsewhere in the body except in the tonsils and mucosa of mouth and palate. It is plausible to assume that the blastomycetes made their way by the lymphatics from the tonsils to the base of the brain. They did not seem to cause any inflammatory reaction in the nervous tissues.

Water Supply Suggestions.—Eijken's advice in the specific case of pollution of the river water from a distillery is to drain the waste waters from the distillery by a separate pipe into the sea or else condense the waste into solid matter which can be used for fertilizer or burned to produce potash. In a second article he relates that in Java wells are frequently used of the Norton type, that is, wide iron pipes are sunk in the ground to a depth of about 48 feet. The lower 30 feet are perforated, and the water is pumped up and can be conveyed to a reservoir. He has recently simplified this

method by sinking the pipes into existing wells and then filling up the wells with gravel nearly to the top, concluding the filling with sand. The ground is not suited for the Norton wells in many places, and he is confident that these gravel wells will be found of great service on plantations and elsewhere where it is impossible to secure reliable drinking water by other means. The diameter of the well can be enlarged as the need for water increases.

Vitamins in Coconut Oil.—Jansen's experiments were made on young rats. The outcome shows no growth-producing influence, and hence he assumes that coconut oil is poor in fat-soluble vitamins.

Is Vitamin Identical with Secretin?—Jansen's experimental research answers this question in the negative.

Agglutination of Flexner Bacilli by Normal Serum.—Flu reports positive agglutination at from 1:75 up to 1:900 in all but fourteen of 107 normal persons whose serum was tested at Weltevreden in Java. The tests with the Shiga-Kruse bacilli were negative in all but four of the same group.

Prevalence of Intestinal Parasites in Natives of Java.—Flu stated some time ago that he believed flies had some part in the distribution of amebas, and recent investigation of 941 inhabitants of native villages has confirmed this assumption. As the conditions for sanitation are extremely unfavorable in the native homes, it is evident that flies take a great share in the spread of ameba enteritis. This at the same time explains how the disease can spread to the homes of Europeans near by, although the latter take every precaution to have good drinking water. He found cysts of the tetragena (*Endameba histolytica*) in 10 per cent., accepting as such only those cysts 10 to 15 microns in diameter, with from one to four nuclei and the rodlike chromidia in the protoplasm characteristic of the tetragena. The prevalence of ascaris in 50 per cent. shows that opportunity for contamination with feces is present in excessive degree, and this renders the outlook for amebic enteritis even graver. The trichocephalus was found in about 33 per cent. and the ankylostoma in about 20 per cent.

Carriers of Dysentery Bacilli.—Flu has been unable to find records of healthy carriers of the Flexner or Y bacilli of dysentery. The carriers known to date seem to be all sufferers from chronically recurring bacillary dysentery. The Flexner bacillus seems to thrive on bile. Both this bacillus and the Y bacillus have recently been found in the general circulation in a number of cases. He queries where the dysentery bacilli remain during the latent intervals, and urges examination of the bile in all dysentery cadavers, as there is a possibility that the bacilli infest the biliary organs and may lurk here when the subject seems entirely cured. He knows of only one instance in which the bacilli were found in a cadaver with absolutely normal intestinal mucosa. They were of the Y type and were found in the bile only.

Protozoa in Human Intestine.—Flu has made a special study of this subject in the last few years, and here describes his findings. The *Ameba limax* does not seem to be pathogenic; it sometimes disappeared spontaneously from the stools without any improvement following in the clinical condition. His research on the blastocysts common in the stools examined confirmed their blastomycetic nature. But other cysts which closely resembled them proved to be forms of degeneration of tetragena cysts. His analysis of the literature and his illustrations confirm this assumption.

Hospitalstidende, Copenhagen

Nov. 6, 1918, **61**, No. 45

*Roentgen Treatment of Sarcoma. T. Eiken.—p. 1553.
Types of Tubercle Bacilli in Skin Tuberculous Lesions. C. W. Andersen.—p. 1574. Cont'n.

Roentgen Treatment of Sarcoma.—Eiken reviews the experiences at Rovsing's private clinic with roentgen treatment of sarcoma. One patient with a sarcoma originating in the diploë was given twenty-one open exposures, and the tumor which had spread to involve the dura and the cortex of the brain retrogressed completely. At present, four and one-half years after the operation, the man seems to be free from the least sign of recurrence and has full earning capacity. Eiken reviews further the publications of other Scandivanian writers on this subject; and reports a recent series of four cases. Two are in young men and the sarcoma was too far advanced for a complete cure, although benefit was derived. In all four cases the sarcoma displayed great sensitivity to the rays, and if the treatment could have been begun earlier it might have been effectual in all four cases. The third patient in the group was a boy of 7 with a sarcoma in the orbit. It was removed by Krönlein's plastic technic, without injury to the eyeball, and there has been no sign of recurrence during the two years since. He recently returned with a painful tumor in the upper arm, and roentgen treatment was promptly applied with a total of 70 H units, and normal conditions were apparently restored, except for slight changes visible only with roentgenoscopy and not palpable. The eye that had been operated on seems to be normal and the boy is otherwise strong and well. The roentgen treatment in this case had been begun two months after the first signs of the tumor. The microscope showed it to be a round cell sarcoma. The fourth patient was a woman of 31 with a cystic, painful lesion in the lowest portion of the femur. It had given trouble for seven years, and an accumulation of blood and part of one meniscus had been removed after a fall on the knee. The roentgen ray cast a shadow suspicious of sarcoma, but the long duration of the cystoma rendered this improbable. On the assumption of fibrous ostitis, the cyst was curetted and filled with 1 per cent. silver nitrate solution. The microscope then revealed that the lesion was a spindle cell sarcoma; for this the operation had been by no means radical enough. Before attempting a mutilating operation, a course of roentgen exposures was made. The condition in the knee afterward was much better than it had been for many years, and there has been no sign of recurrence or further disturbance during the eighteen months since. This combination of operation and roentgen treatment promises good results, especially when the lesion permits cross-fire exposure, as in the orbit. His case seems to confirm that the rays do not injure the eye. The boy's eye was exposed to large doses, without any appreciable by-effects. A preceding chemosis, which had followed the operation, subsided smoothly under the roentgen exposures. The reports to date on exposure of the eyeball are rather contradictory. In Gocht's case a melanosarcoma had been removed from the orbit and there had been no recurrence for nine years to date of writing.

Ugeskrift for Læger, Copenhagen

Nov. 28, 1918, **80**, No. 48

Nirvanol. Geill.—p. 1877.
*Respiratory Exercises in Influenza. V. E. Holm.—p. 1881.
"Barbed-Wire Disease." A. Kissmeyer.—p. 1882.
*Arc Light Treatment of Laryngeal Tuberculosis. N. R. Blegvad.—p. 1910.

Deep Respiration in Influenza.—Holm noticed in his own person after an attack of bronchopneumonia that he experienced great relief after exercise in climbing that had made him pant. He then systematically practiced deep breathing exercises, and found his convalescence much hastened. He has since recommended the same to patients with acute or chronic pulmonary affections, teaching them how to breathe deep and repeat this exercise several times a day. None died in the thirty-six cases of pneumonia among his 400 influenza patients except one woman in childbirth. He would like to know if others have found respiratory exercises useful in pneumonia, etc. If so, more stress should be laid on deep respiration in treatment of pulmonary affections.

Phototherapy of Laryngeal Tuberculosis.—Blegvad gives an illustrated description of twelve cases of tuberculous lesions in the larynx in which courses of universal arc light baths were given by the technic used at the Finsen Institute. The lesions retrogressed so completely in six of the twenty-four cases that the outlook for this treatment seems very encouraging in a certain proportion of cases. In five cases no benefit was apparent, but he has not given up hope yet in all of them. (His report is in the Society Proceedings section.)